UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, Maryland 20910

AUG 9 1994

Responded w/no obj. ejp.

MEMORANDUM FOR: Distribution*

FROM: Joe P. Clem
Chief, Plans and Regulations Division

SUBJECT: Final Amendment 8 to the Fishery Management Plan for the Crustacean Fisheries of the Western Pacific Region

Attached for your review is a copy of final Amendment 8 to the Fishery Management Plan for the Crustacean Fisheries of the Western Pacific Region (FMP), prepared by the Western Pacific Fishery Management Council. This document includes an Environmental Assessment (EA) and Regulatory Impact Review (RIR).

Amendment 8 to the FMP would establish framework procedures for considering quota adjustments for the fishery and would eliminate a 2-year landing requirement for permit renewal. Notification and reporting procedures also would be modified. These changes are intended to improve the administration of the management program, to improve enforcement and monitoring efforts, and to remove a restrictive criterion for permit renewal.

Please provide any comments on Amendment 8 and its EA/RIR to our office by Thursday, September 1, 1994. If you have any questions, call Robert Gorrell or Mark Murray-Brown at (301) 713-2341.

Attachment

*Distribution

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WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

Amendment 8

Fishery Management Plan for the Crustacean Fisheries of the Western Pacific Region

(includes environmental assessment, regulatory impact review and proposed regulations)

12 July 1994

Western Pacific Regional Fishery Management Council
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APPENDICES

Amendment 8

Fishery Management Plan for the Crustacean Fisheries of the Western Pacific Region

1.0 INTRODUCTION

1.1 Responsible Agencies

The Western Pacific Regional Fishery Management Council (Council or WPRFMC) was established by the Magnuson Fishery Conservation and Management Act to develop Fishery Management Plans (FMPs) for fisheries operating in the US Exclusive Economic Zone (EEZ) around American Samoa, Guam, Hawaii (including the Northwestern Hawaiian Islands), the Northern Mariana Islands, and other US island possessions in the central and western Pacific[1]. Once an FMP is approved by the Secretary of Commerce (Secretary), it is implemented by federal regulations which are enforced by the National Marine Fisheries Service (NMFS) and the US Coast Guard (USCG), in cooperation with state and territorial agencies.

For further information, contact:

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1.2 Public Review and Comment

The WPRFMC involves commercial and recreational fishing interests, as well as other interested parties in developing FMPs and amendments. This ensures that those who might be affected by new management measures have an opportunity to submit ideas and suggestions for potential actions by the Council, and to be involved in the decision-making process. The Council's Crustaceans Advisory Panel and Crustaceans Plan Team developed the proposed changes at a public meeting held on 26-27 January 1993. The Council's Scientific & Statistical Committee reviewed and refined the proposed changes at a public meeting on 25-26 March 1993. The recommendations of these advisory groups were discussed at the Council's public meeting held on 26-29 April 1993 in Honolulu, Hawaii. The

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[1] *Other possessions include Johnston Atoll, Kingman Reef & Palmyra Island, Jarvis Island, Howland & Baker Islands, and Wake Island.*

Council approved the content of the proposed amendment, and directed its staff to complete the amendment for Secretarial review and approval. The approval process will include publication of the proposed regulations for public review and comment. A draft of the regulations is included in this amendment.

1.3 Preparers

Amendment 8 was prepared by:

Robert Harman, Staff Biologist
Western Pacific Regional Fishery Management Council, Honolulu, HI

Dorothy Lowman, Staff Economist
Western Pacific Regional Fishery Management Council, Honolulu, HI

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NMFS Southwest Region, Long Beach, CA

2.0 EXISTING MANAGEMENT MEASURES

The FMP for the Crustacean Fisheries of the Western Pacific Region was developed by the Council, and the final rule implementing its regulations was published by the NMFS at 48 FR 5562 on 7 February 1983. The FMP has been amended seven times in response to changing conditions in the fishery. The FMP regulates fishing for spiny and slipper lobster in waters of the Northwestern Hawaiian Islands (NWHI) (50 CFR 681 Subpart B). The FMP also regulates fishing in the EEZ of the main Hawaiian Islands (50 CFR 681 Subpart C), even though most lobster fishing in the main Hawaiian Islands occurs in state, not federal, waters. There are currently no federal regulations for EEZ waters around American Samoa and Guam because no substantial lobster fisheries exist there. Regulations for these latter two areas will be developed at the first indications of any significant fishery. The regulations for each stock are based on the principles of Optimum Yield (OY), i.e., management based on Maximum Sustainable Yield (MSY) as modified by relevant ecological, social and economic considerations. The regulations include the following measures:

- To prevent overfishing (protect reproductive potential), minimum size limits, measured as tail width, are: spiny lobsters--5.0 cm, and slipper lobsters--5.6 cm. Minimum sizes for slipper and spiny lobsters were determined so that the spawning stock biomass per recruit (SSBR), when fishing mortality was equal to natural mortality, would be 50% of the SSBR in the absence of fishing.

- Recruitment overfishing is defined to be a level at which the spawning potential ratio, i.e., the spawning stock biomass produced on average by a

post-larval recruit in a fished population versus an unfished population (measured for a specific fishing area), is 0.2 or below.

- To protect lobster spawning biomass, the NWHI lobster fishery is closed during the months of January through June, and egg-bearing lobsters cannot be retained.

- To further support sustainable yield, the NMFS determines annually a harvest quota (total allowable catch) that may be taken by the fleet. Once the quota is taken in a given year, the fishery is closed for the year. The quota is set by a formula which considers, among other parameters, a target catch per unit effort (CPUE) of 1.0 lobster per trap.

- Commercial fishing gear is restricted to traps. To protect Hawaiian monk seals, the trap entrance must not exceed 16.51 cm (6.5 inches) in diameter. To facilitate the escape of sublegal lobsters, every trap must have two escape panels, each with four circular, 67-mm diameter holes.

- To minimize overcapitalization in the fishery, entry to the NWHI fishery is limited to 15 vessels, and no vessel may carry more than 1100 traps.

- To facilitate business decisions, and provide a mechanism for prospective fishermen to enter the fishery, permits are freely transferable, with or without the sale of the vessel. However, in order to prevent excessive consolidation of permit ownership, no one person,corporation, etc., can hold more than one permit at a time unless an owner was originally issued more than one limited entry permit because he/she owned more than one qualifying vessel. In this case, the owner may hold all initially issued permits until such time a permit is surrendered, transferred as a result of the sale of a vessel, or revoked as a penalty for violation of regulations.

- Fishermen must meet minimum landings requirements (equivalent to at least four lobsters per each trap normally used) over a two-year period to maintain eligibility for a permit.

- To provide a mechanism for new entry, any surrendered or additional permits for the fishery will be issued to vessel owners on the basis of a point system. An applicant will receive points for the following types of commercial fishing activity since August 8, 1985: captain of a NWHI lobster fishing vessel (3 points/year), MHI lobster fishing or non-lobster fishing in NWHI (2 points/year), and all other commercial fishing activity in Hawaii EEZ (1 point/year).

- To protect lobster stocks and marine mammals in the NWHI, no commercial fishing is allowed (1) in waters shallower than 10 fm (18.29 m), (2) within

lagoon waters, or (3) within 20 nm of Laysan Island. These refuges amount to about 16% of the total NWHI lobster habitat.

- To provide relevant and timely fishery information for management purposes, fishermen are required to have a federal lobster fishing permit and to supply catch reports after each trip.

- To facilitate monitoring of catches and catch rates, which are needed to establish the final quota, and determine of the date when the quota is reached and the fishery is closed, fishermen must provide weekly at-sea catch reports when specified by the Southwest Regional Director (RD).

3.0 BACKGROUND AND NEED FOR ACTION

In January 1993, the Council's Crustaceans Plan Team (PT), Crustaceans Advisory Panel (AP), other industry participants, and government representatives reviewed the 1992 NWHI lobster fishery, and examined the Crustaceans FMP and the operational details of the recently-implemented management system (1992 was the first season that the NWHI fishery operated under a system of limited entry, fleet quota and closed season, established by FMP Amendment 7). A discussion of the lobster fishery in relation to biological and environmental factors was included, as was a discussion of the future outlook for the fishery. Subsequently, the Council reviewed the recommendations of the review group and concluded that there was sufficient cause to amend the FMP.

3.1 Description of NWHI Lobster Fishery

The NWHI lobster fishery is a relatively distant-water fishery, landing mostly frozen tails. Vessels range from 50 to 95 feet in length and many are equipped with blast freezing equipment. The average crew size is about 4-5 people, including the captain.

Prior to the institution of the annual quota system, fishing trips were frequently more than one month long with about 80% of that time spent fishing, the rest traveling to grounds or between fishing bank locations. Because of storage space requirements for traps, bait and processed products, fuel was often the limiting factor in trip duration. Under the current annual quota management program, trip length may also be affected by the number of active vessels fishing for a finite quota. After notification by the Regional Director of the date when the quota will likely be reached or exceeded, fishermen may have to cut short their trip in order to return to port and offload their catch before the announced last date for landing lobsters.

A limited entry program was implemented in 1992. A maximum of 15 vessel are allowed to participate in the fishery. This fleet size maintains the competitive

nature of the fishery, as desired by the participants, while dampening boom-and-bust cycles in fishery participation observed in the past with fluctuations in stock availability.

Fifteen limited entry permits have been issued for the lobster fishery, although only 11 limited entry-permitted vessels fished in 1992. Until an emergency six-month closure was first imposed in 1991, most of the vessels were full-time lobster operations. Due the present restrictions on lobster fishing, all lobster permit holders were grandfathered into the longline limited entry program to provide fishermen with an alternative fishery. One of the 15 permit holders also owns a NWHI bottomfish limited entry permit for the Ho'omalu Zone, and at least two vessels also fish part of the year in Alaskan crab fisheries and the Hawaii longline fishery.

3.2 Summary of 1992 fishery, 1993 fishery closure, environmental trends and outlook for the future

The 1992 NWHI lobster fishery harvested 424,445 spiny and slipper lobsters in 721,682 trap-hauls, resulting in an annual CPUE of 0.59 lobster/trap-haul. After the limited-entry program was approved in April 1992, the fishery was closed until July. During the July-December fishing season, 353,221 lobster (81% of the final quota) were caught by 582,801 trap-hauls, for an average fishing season CPUE of 0.61 lobster/trap-haul. The 1990 and 1991 CPUEs were 0.66 and 0.56 lobster/trap-haul, respectively. Thus, the stocks had not recovered appreciably from the drop in CPUE that occurred in 1990.

The annual stock assessment is based on models containing a number of biological parameters (e.g., catchability, recruitment, carrying capacity, CPUE). Data from research cruises and fishery performance are used to estimate parameter values. Analyses based on commercial fishery data from 1983 through 1992 indicated that recruitment to the fishery dropped by 50% after 1989. Parameter estimates from this analysis were used to forecast the 1993 quota as outlined in Amendment 7 of the Crustacean FMP. Under the guidelines in Amendment 7, the forecasted-population model indicated that lobster population would not have recovered sufficiently by July 1993 to allow a commercial fishery that could attain an average CPUE of 1.0 lobster/trap-haul during the 1993 fishing season. Therefore, the 1993 preseason quota forecast was zero lobsters (90% confidence interval: 0 to 271,000 lobsters), and the NMFS closed the fishery.

Research trapping during June 1993 indicated that spiny lobster CPUE increased slightly from 1992 to 1993 at Maro Reef and Necker Island. The spawning biomass in both areas increased, as well, but remained low compared to earlier years of the fishery. Using commercial fishery data from 1983 through 1992, the dynamic population model estimated a preliminary 1994 harvest quota of 200,000 lobsters (combined spiny and slipper species). The final quota will be determined

in August 1994 from a combination of pre-season research data and commercial logbook data from the first month of fishing.

3.3 Review Group Recommendations

3.3.a Annual Quota Determination

Industry, AP and PT members discussed these results, particularly the issue of whether the target CPUE of 1.0 lobster/trap-haul in the quota formula should be modified to permit a more consistent annual quota or harvesting opportunity, keeping in mind that the fishery may be facing low quotas for a number of years to come, as a result of environmental conditions. Long-term (decadal-scale) environmental regimes (e.g., broad-scale ocean circulation and vertical mixing patterns) may have major impacts on the productivity of lobsters, independent of fisheries. Recent research has shown that a significant change in the marine environment occurred in the North Pacific during the late 1970s to 1990, i.e., this was a period of stronger winds and a deeper mixed layer. The entire subtropical circulation gyre also appears to have shifted southward during this period. This may have resulted in higher biological productivity which reached a maximum in the early 1980s and has now returned to lower, long-term levels. Assigning the responsibility for changes in stock abundance to environmental conditions, rather than overfishing, is supported by the fact that other non-exploited NWHI species (monk seals, sea birds and reef fishes) also showed declines in productivity of 30-50% from the early 1980s to the early 1990s. Further evidence for the environmental change hypothesis is that the change in productivity seems to be greatest for the less-heavily fished banks further to the northwest (e.g., Maro Reef).

If productivity of the NWHI is now lower than it was in the early 1980s, as suggested by environmental data, then quotas will remain low until there is an environmental change. If low spawning biomass was the reason for the low quota then, given the four-year lag between spawning and recruitment into the fishery, it may require a decade before strong recruitment to the fishery occurs again. One indication that recruitment to the fishery may actually decline is that the larval abundance from the 1992 survey was about 25% of the abundance in the 1989 larval survey. The larvae in 1989 resulted in the 1992 recruitment to the fishery, while the 1992 larvae will produce the 1995 recruitment to the fishery. The advisors agreed that it would not be prudent at this time to re-address the original estimates of MSY and SSBR, or to lower the target CPUE, until the developing environmental models are further refined and environmental change theories can be further verified. The Team did stress that environmental data are key explanatory variables in the lobster recruitment model.

The review group reported to the Council that the discussion in the FMP of the annual quota determination may be unclear regarding the revision of quota formula

parameters. The group recommended that it be clarified that the types of biological parameters used in the formula (e.g., recruitment, carrying capacity, catchability, CPUE) do not change, but that the estimates of these parameters are updated annually.

3.3.b Forecast quota

Some confusion had also arisen regarding use of the term "initial quota". The review group indicated its view that the Council intended to use the "initial quota" as early notice to fishermen of what the quota was likely to be for the year. Fishermen could then make their business decisions early in the year, and vessels would not be forced to fish in July if the quota were small and the fishery likely to be unprofitable if all boats fished.

The review group recommended that changes be made to the regulations that will provide a procedure to consider allowing limited fishing when the forecasted quota is zero. With such changes, the RD with concurrence from the Council, would be able to 1) close the fishery or 2) allow some level of fishing for some period of time (to be determined by the RD and Council) with the intention of collecting fisheries data, or alleviating special economic hardship cases or unusual hardship cases (e.g., illness or loss of vessel). Any decision to allow fishing must be accompanied with an assessment of the risk of overfishing associated with the level of fishing allowed.

3.3.c Operations -- permit renewal requirements

The limited access management program for the NWHI lobster fishery became effective on 27 April 1992. Under federal regulations implementing the program, the NMFS issued the maximum 15 permits for Area 1 (NWHI) to vessel owners who applied for initial permits and met the qualifying criteria. These permits may be transferred freely (i.e., with or without the vessel), and prior to the 1992 fishing season, three of the initial permits were transferred to other vessels. The new management program established a landings requirement which requires vessels to make a qualifying landing during one of the two years preceding the year for which the renewed permit is valid (a "use-it-or-lose-it" provision).

In January 1993, the Southwest RD advised the Council and notified lobster fishermen that the 2-yr requirement would not be applied until the 1994 permit year because the regulations did not take effect until the spring of 1992. While 15 permits had been initially issued, only 11 limited entry-permitted vessels fished in 1992. All 15 permit holders had applied for 1993 permits by the end of December 1992. However, the fishery was closed during 1993, eliminating the possibility to meet the landings requirement during 1993. Given this fact, the Council and NMFS reviewed the FMP landing requirement and agreed that all vessel owners who would have qualified for 1993 permits should qualify for 1994 permits.

NMFS is in the process of publishing an interpretative rule in the Federal Register which will clarify that the landing requirement will be first applied to permit renewals for the 1995 lobster season.

An initial quota of 200,000 lobsters has been established for the 1994 season. At this relatively low level of allowable take, the season may not last long, particularly if vessel activity is high. Under the current use-or-lose provision, vessels inactive in 1992 would be forced to fish in 1994 in order to retain their permits, even if their participation may not be desirable from either an economic or biological perspective. The Council concurred with the review group's recommendation to rescind the landing requirement. The Council believes it is unwise to continue the use-it-or-lose-it provision, given the potential for low quotas for several years. This is discussed in more detail in section 4.2(a).

3.4 Enforcement Activity and Issues

NMFS Southwest Region Enforcement reported that in 1992, NMFS agents spent over 400 investigative hours to enforce the regulations implementing the Crustacean FMP. An additional estimated 200 hours were spent by deputized officers from the State of Hawaii's Marine Patrol and the Department of Conservation and Resource Enforcement. At-sea enforcement efforts in 1992 consisted of four aerial patrols conducted with the US Coast Guard. During 1992, nine lobster vessels were inspected at dockside. These boardings and subsequent investigations resulted in detecting violations and assessing penalties in six cases.

NMFS Enforcement also reported that, for the NWHI lobster fishery, they have relied primarily on dockside enforcement during off-loading to determine compliance with the regulatory requirements of the FMP. Intensive dockside enforcement has been proven the most effective method of enforcing the provisions of this FMP, and the NMFS had intended to provide an accurate and thorough boarding of as many of the returning lobster vessels as possible under the new management regime. This goal proved difficult to attain, however, due to the uncertainty of off-loading locations and times.

There was considerable discussion by the PT of Enforcement's inability to monitor the quota, and by the AP and industry representatives of the enforcement of particular regulations during the last open season (1992). Among the problems noted were the need to narrow the landing notification period to facilitate shoreside monitoring and enforcement, the need to designate a single point to which notifications would be made by the fishermen, and the benefits of changes in recordkeeping and reporting requirements. These are addressed in the following sections.

4.0 PROPOSED ACTIONS, ALTERNATIVES AND IMPACTS

Amendment 8 principally addresses operational deficiencies that were identified during the first year of the limited entry and quota management program. The amendment would, among other things, establish framework procedures for considering quota adjustments for the fishery and would eliminate a landing requirement for permit renewal. Notification and reporting procedures would also be modified. These changes are intended to improve the administration of the management program and assist in achieving optimum yield from the fishery.

One of the objectives of the limited entry program was to reduce overcapitalization and allow vessels in the fishery to operate efficiently. The elimination of the landing requirement for permit renewal will help meet this objective by removing the requirement to fish just to retain the permit. The present 2-yr landing requirement may force fishermen to fish during years of small quotas when participation may not be desirable from either a conservation or an economic perspective.

The proposed framework procedures for allowing some level of fishing when the forecast quota is zero and for possible modification of the target CPUE used in the quota determination will help assure that the best information available is used when determining allowable harvest levels.

Finally, the proposed changes in notification and reporting procedures will improve the effectiveness of enforcement and monitoring efforts.

4.1 Proposed Actions

The Council concurred with the recommendations of the review group and this amendment proposes to:

- Eliminate the two-year "use-or-lose" landing requirement for permit renewal;
- Framework the target CPUE;
- Change the term "initial quota" to "forecast quota", and provide a framework procedure to consider allowing fishing when the forecast quota is zero;
- Narrow the notification period for vessels returning to port;
- Require fishermen to notify an enforcement agency of the location and time of off-loading, 6-12 hr prior to off-loading their catch;
- Modify and framework recordkeeping and reporting requirements as follows:
  - name of the report would be changed from "Transshipment and Sales Report" to "Sales Report";
  - sales report would be revised to include information on the first-level buyer(s);
  - information on tail size categories would be deleted from the report;

- fishermen would be required to submit packing or weigh-out information as part of the revised report;
- sales report would be modified to include space for the number of tails not sold;
- sales report must be submitted within 72 hr of *off-loading*, rather than *landing* as the regulation now reads;
- if the fisherman cannot submit the pack-out information within the 72-hr limit due to circumstances beyond his/her control, then the fishermen must notify the NMFS, so the information can later be obtained from the buyer;

- Have NMFS provide the first-level buyers with standardized worksheets that will facilitate reporting of the information; and
- Authorize the RD to modify reporting requirements and call-in destinations by regulation following consultation with the Council

4.2 Comparison of Proposed Action and Alternatives

4.2.a Eliminate the two-year landing ("use-it-or-lose-it") requirement for permit renewal

The FMP presently contains a requirement that limited-entry permit holders make a qualifying landing at least once during a period of two consecutive years. This provision was originally established to force inactive vessels from the fishery and to provide a mechanism for new participants to enter the fishery in their place. However, the 2-yr landing provision may force vessels to fish in order to retain a permit, even when it may not be desirable from either a conservation or economic standpoint. This is particularly true when the quota is small, a situation which may continue to exist for several years due to environmental conditions. Faced with a small initial quota, fishermen may decide that the anticipated economic returns do not justify gearing up to fish for lobster in a given year. However, under the 2-yr provision, a fisherman cannot make this decision two years in a row. There may be a substantial risk that the initial quota will be exceeded during the initial month of fishing, if a number of vessels must fish to meet landing requirement during a year with a small initial quota. At the same time, fishermen may be forced to fish, even though negative economic returns are anticipated. A low quota, combined with a use-or-lose requirement can create a "race for the fish" where too much capacity is seeking to harvest a limited resource. This situation is counterproductive to the limited entry program's objective of achieving a stable, balanced fishery. For these reasons, the Council proposes to eliminate the 2-yr landing requirement.

The FMP still provides mechanisms for new participants to enter the fishery. Permits are freely-transferable, facilitating turnover through the sale, lease or trade of existing permits. Retaining the point system for new permits will continue to provide a mechanism to allow qualified and interested fishermen to enter the NWHI

fishery if the Council and RD increase the number of vessels allowed in the fishery, or when permits are reissued after being withdrawn, revoked or surrendered.

Rejected alternatives:

Status quo. This alternative removes inactive vessels from the fishery and provides a mechanism to allow new participants. On the other hand, it also induces vessels to fish, even when stocks/quotas are small. The requirement removes much of the decision of when and where to fish from the vessel owner, thus forcing operating inefficiency on vessel owners and increasing the risk that quotas may be exceeded. In addition, the Council and RD have no provisions under the FMP for dealing with hardships, e.g., when a vessel cannot make its qualifying landing for some other reason such as illness or vessel loss.

Remove the landing requirement *and* the qualification point system for new participants. This alternative removes the redundancy of mechanisms for new participants to enter the fishery, and reduces administrative burden; entry and exit are left to the industry. However, it does not address the allocation of new permits which may become available if the Council and RD increase the number of vessels allowed in the fishery, or the reissuance of permits that have been revoked or otherwise surrendered. The point system provides an orderly mechanism for allowing new entry in these situations, and for adjusting the capacity in the fleet upwards, if appropriate. Therefore, the Council has decided to retain the point system.

Retain the landing requirement, but incorporate a point system under which a vessel voluntarily leaving the fishery would be given priority for a new permit when one becomes available. Under the FMP's provision for free permit transferability, it is unlikely that a vessel owner would voluntarily give up a permit rather than trading or selling it. Although a person who voluntarily surrendered a permit would be first in line for new permits, there is no guarantee that a permit would be available when the permit holder was ready to re-enter the fishery. Therefore, this alternative still provides the incentive to participate in the fishery, even at an economic loss, in order to keep a permit. Thus, the Council rejected this alternative.

Eliminate the landing requirement, but establish a new requirement that the owner be "on the vessel" while fishing. This would force turnover of permits when the owner was unable to participate in the fishery at sea. Requiring the owner to be on the vessel would be unsuitable for the NWHI lobster fishery, due to the nature of these fishing operations. This is a "distant water" fishery in that trips are often several months long, and distances traveled are long, requiring a relatively large vessel. Most of the vessels are of a size and value that require multiple owners (many of whom are lending institutions), and such owners may spend more time in port as business managers rather than as at-sea vessel operators.

4.2.b Framework the target CPUE

In Amendment 7 to the FMP, the discussion of the annual quota determination indicates the formula parameters for the annual quota. It needs to be emphasized that, under the FMP at this time, the formula does not change, but the parameter estimates (e.g., actual catch per unit effort) used in the formula are updated annually. However, the target CPUE does not change. The Council proposes to establish a framework procedure to review and possibly adjust the target CPUE through rulemaking by the RD, in consultation with the Council, rather than requiring an FMP amendment. This would allow more rapid and simpler response to new information than through an FMP amendment.

The current target CPUE used in determining the quota is 1.0 animals per trap-haul. This was the effort level considered to be consistent with the estimated MSY for spiny lobsters of about one million animals per year. As indicated in the amendment defining overfishing for lobster stocks, it is estimated that an actual CPUE in the fishery of 0.5 would reflect a decline in the stocks to the level at which overfishing is defined. Within this range of 0.5 to 1.0, however, overfishing should not be a problem. As more information becomes available concerning the productivity of the stocks, the relationship of the stocks to the overall marine environment, and the response of the stocks to environmental change, it may be appropriate to change the target CPUE so the quota formula will be more reflective of stock status and quotas can be set more precisely.

Therefore, the Council proposes the following framework procedure for considering and, if appropriate, changing the target CPUE for the quota formula:

1. The Crustaceans Plan Team will annually report to the Council whether or not the target CPUE in the quota formula is consistent with the estimation of the MSY for the stocks, given the results of any new research concerning the productivity of the stocks.

2. The Plan Team will indicate whether or not a change in the target CPUE will result in quota determinations that would more precisely reflect the status and long-term productivity of the stocks.

3. If the Plan Team indicates that a change in the target CPUE is appropriate, the Plan Team will indicate the proposed target CPUE, the data that support a change in the target CPUE, and the impacts and implications of the change, including the risk of overfishing.

4. The Council will consider any such recommendation at its next scheduled meeting. The public notice for the meeting will include specific reference to the potential for the Council to take action to

recommend a change in the target CPUE, and will indicate that a portion of the meeting will be open to public comment on the issue.

5. At its meeting, the Council will review the statistical information supporting the change in the target CPUE, will ask its Scientific and Statistical Committee and Advisory Panel for advice, and will decide whether or not to recommend a change in the target CPUE through rulemaking.

6. If the Council agrees to recommend a different target CPUE, the Council will submit this request to the Southwest RD with supporting documentation. The request must describe how the Council's recommendation will not result in or substantially increase the risk of overfishing of the stocks.

7. If the RD concurs, s/he will file a notice in the Federal Register indicating the proposed change in the target CPUE for the quota formula, and summarizing the information supporting this change.

8. Following a 30-day comment period, the RD will consider the information submitted by the Council and the public. S/he will then determine whether or not the change in the target CPUE is consistent with the objectives of the FMP and will prevent overfishing.

9. If so, he shall file a notice in the Federal Register indicating that the new target CPUE will be applied in the quota determination.

10. If the RD concludes that the proposed change in the target CPUE should not be approved, s/he will indicate in writing to the Council the reasons for the disapproval.

Rejected alternatives:

Status quo. This alternative would maintain the current approach under which the target CPUE can only be changed by an amendment to the FMP. This can be cumbersome and slow. The proposed framework process will provide the same amount of public and scientific review, but will require less paperwork and time to implement changes in the target CPUE.

4.2.c Change the term "initial quota" to "forecast quota", and provide a mechanism for allowing or not allowing fishing when the forecast quota is zero.

When the quota management system was implemented, the Council intended to use the "initial quota" as early notice to fishermen of what the quota was likely to be for the year rather than as a binding level of allowable catch. Fishermen could then make their business decisions early in the year, including deciding not to fish in July if the quota was marginal. During the first full year of the quota program, however, the initial quota was zero and the NMFS concluded that the fishery would be closed for the year. The intent of the Council, however, was that the initial quota be a forecast, and that the final quota (based on actual fishing results in the first month) determine when fishing would cease for the year.

The Council recognizes that a quota forecast of zero is indicative of probable low recruitment to the stock. The Council also notes, however, that the variability in recruitment and the limited data that may be available in any year to estimate the quota can result in wide disparity between the estimated recruitment and actual recruitment. While the Council does not want to allow fishing that will result in overfishing of the stock, the Council also recognizes that actual fishery results (if a fishery is permitted early in the season) can result in substantial changes to the estimate of abundance and the consequent quota. The Council also believes that there will be little risk of a rush into the lobster fishery if fishing opportunity is severely restricted due to a forecast quota of zero and if the "use-or-lose" provision is eliminated. Therefore, the Council recommends that changes be made to the regulations that will provide a discretionary mechanism regarding closure of the fishery when the forecast quota is zero. With this change, the RD, with concurrence of the Council, would be able to either close the fishery or allow some level of fishing for some period of time (to be determined by the Council and RD) with the intention of collecting fisheries data or alleviating economic or unusual hardships. The proposed framework process is as follows:

1. If the Southwest RD determines that the forecast quota is zero, the RD will immediately advise the Council.

2. In the Federal Register notice containing the forecast quota of zero, the Southwest RD will indicate that this matter will be discussed by the Council at its next meeting, with the possibility that the Council may recommend a limited fishery.

3. The Council's public notice for the next meeting will indicate that the Council intends to discuss the forecast quota with the RD, and may make recommendations that would allow some level of fishing during that year.

4. At its meeting, the Council will review the statistical information supporting determination of the quota. Special attention will be paid to confidence intervals associated with the estimate, and factors which may affect the accuracy of the estimate. For example, the quota formula depends heavily on fishery data from the preceding year. If anomalous conditions existed (i.e., low participation by the fleet, incomplete coverage of the archipelago, adverse weather conditions or other environmental conditions affecting catchability), then commercial CPUE may not be representative of lobster abundance, and a zero forecast quota may be overly conservative. In addition, new research information may be available indicating that the quota should be reassessed. The Council will ask its Crustaceans Plan Team, Scientific and Statistical Committee, and Advisory Panel for advice; and shall decide whether to recommend allowing some level of fishing to collect fishery data on which to base the final quota.

5. If the Council agrees to recommend a different quota, or allow some level of fishing to collect fishery data, the Council will submit this request to the RD with supporting documentation. The Council may decide to open the fishery for a limited period of time and may impose additional measures to restrict effort or catch during that time period. The request must demonstrate how the Council's recommendation will not result in or substantially increase the risk of overfishing of the stocks.

6. If the RD concurs, s/he will file a notice in the Federal Register indicating the change in the forecast quota or other restricted fishing conditions, and summarizing the information supporting this change.

7. If the RD does not concur, s/he shall provide a written explanation of the reasons for rejecting the Council's recommendation.

Rejected alternatives:

Status quo. This alternative would retain the present "initial quota" approach which fails to account for the variability and uncertainty in the estimation of the initial quota and is inconsistent with the Council's original intent in establishing the quota forecast procedure.

Change the term and allow fishing during the first month regardless. This alternative would allow fishing in the first month of the season regardless of the level of the forecast quota. Depending on the size of the initial quota and the level of fishing effort, the initial quota could be significantly exceeded in a full month of fishing. This approach was rejected because it would result in an unacceptably

high risk of overfishing compared to the proposed action which would allow the Council to consider a variety of options (e.g., delaying the season opening, allowing less than a month of fishing initially, imposing other restrictions on effort or catch).

4.2.d Narrow the notification period for vessels returning to port.

The current regulations require vessels to report "at least 24 hr before landing". The Council recommends that the notification period be restricted to "at least 24, but not more than 36 hr before landing" to allow for improved dockside enforcement of the FMP regulations. This approach was requested by NMFS Enforcement and would permit more effective scheduling of dock-side enforcement presence when vessels return to port.

Rejected alternatives:

Status quo. This alternative would maintain the current call-in requirement. This open-ended requirement does not allow enforcement agencies to efficiently schedule agents' dock-side presence for effective shoreside monitoring and enforcement of regulations concerning size limits, prohibition of retention of berried lobsters, and reporting requirements.

4.2.e Require fishermen to notify enforcement agency of their location and time of off-loading, 6-12 hr prior to off-loading their catch.

There are presently no regulations requiring a vessel to notify NMFS of when and where it intends to off-load its catch. Adding this requirement will support enforcement agencies' efforts to enforce regulations by deploying shoreside resources to monitor unloadings on a timely basis. This should be sufficient to allow agents to either arrive dockside in time for the off-loading, or notify the vessel's master that enforcement's presence is not required. This is an additional reporting burden to vessel operators, but operationally less so than requiring the presence of enforcement agents before off-loading catch.

Rejected alternatives:

Status quo. Vessels already notify NMFS once (prior to returning to port), so the status quo would be least burdensome to vessel operators. Dockside enforcement is hampered, however, because off-loading occurs at variable times after arriving in port, sometimes very quickly when the market is favorable and buyers are present, and sometimes days or weeks later as a result of low prices or limited storage. Thus, enforcement agents have difficulty finding individual vessels at a time when they are unloading and, as a result, are not in a position to monitor the unloading and enforce the regulations consistently.

Require vessels to notify NMFS within specified time period prior to off-loading, and wait for presence of Enforcement Agent before off-loading. This would ensure that enforcement was present during off-loading, but would add an additional burden on vessels. In addition, given the current levels of staffing and many other duties, enforcement could still not guarantee that they would be there in time for the scheduled unloading, thus adding to vessel costs in terms of time lost.

4.2.f Authorize the RD to change the contact points (destinations) of both the at-sea notifications and shoreside contacts through written notice to the fishermen.

Present federal notification procedures in the four FMPs require fishermen to call in at varying times and locations. Providing fewer contact points will simplify reporting for fishermen and the various agencies that use the information called in to them. Efforts to review all notification procedures for FMP fisheries and develop a streamlined, comprehensive notification procedure for all federally-managed fisheries are in progress. The Council recommends that the resulting changes to the lobster regulations be implemented by the RD through written notice to the fishermen. This will result in improved data collection and enforcement.

Rejected alternative:

Status quo. The present system of multiple contact points and call-in schedules is confusing to both fishermen and management agencies that receive calls. The discrepancies are especially confusing to vessels that participate in several fisheries, NWHI lobster vessels in particular.

4.2.g Modify recordkeeping and reporting requirements.

Fishing logbook accuracy is essential under the quota system, but there is no easy way to verify the accuracy of vessel logbooks, given current enforcement capabilities. One way to help verify logbooks is to cross-check with the "Transshipment and Sales Report". Although originally established to provide economic information, and later modified to provide information on lobster tail sizes for biological analyses, this report also has potential for the verification process. This is particularly important since actual verification of the quota by enforcement agents completely counting the lobsters during unloading is apparently unfeasible. The timeliness and completeness of the Transshipment and Sales Report is a problem, however, because the vessel operators must rely on information from the buyer to complete the report, and this information is sometimes not available until well after the required 72-hr post-sale submission deadline. The current usefulness of the Transshipment and Sales Report as a verification (cross-check) tool is also limited because it is supplied by the vessel rather than the first-level buyer.

Proposed changes would include:

a) The name of the report (Report) would be changed from "Transshipment and Sales Report" to "Sales Report" to more accurately reflect conditions in the market.

b) The Report would be revised to include information (name, address, phone, etc.) on the first-level buyer(s)

c) Information on tail size categories would be deleted from the Report but fishermen would be required to submit packing or weigh-out information as part of the revised Report. These packing reports must include information on the size composition of landings (as specified below).

d) The Report would also be modified to include space for the number of tails not sold (i.e, given away, etc.). This is critical if the sales reports are going to be used for cross-checking the daily catch logs.

e) A provision would also be added that, if the fisherman cannot submit the pack-out information within the 72-hr limit due to circumstances beyond his/her control (i.e., the buyer does not provide it in time), then the fishermen must so indicate on the Report so the information can later be obtained from the buyer; this notification would be in the form of an additional box to check on the report if the vessel has not received the pack-out sheet from the buyer. The regulations would be modified to require first-level buyers to make records available for inspection and copying by authorized officials.

f) The wording of the 72-hr time limit would be changed to require submission of the sales report within 72 hr of *off-loading*, rather than *landing* as the regulation now reads. With the addition of an off-loading notification (see 4.2.e), this can be effectively enforced.

g) The RD may, after consultation with the Council, modify the information provided on the Report through written notice to the fishermen. Written notification to the 15 permit holders will be an administratively simple way to implement modifications agreed upon by the Council and the RD in a timely manner. Subsequent revision of the regulations will still be consistent with the Administrative Procedures Act.

With these changes, there would be no standardized report for submitting size information. As long as the weight and/or number of lobsters by 2-oz size classes is reported, it will be sufficient for economic and biological analyses. The NMFS would also provide the first-level buyers (and vessels, because they sometimes sell

directly and, thus, are considered "first-level buyers") with standardized worksheets that will facilitate reporting of the information (see Appendix 6.3) Sales Reports would be submitted within 72 hours of off-loading. Fishermen would be required to include packing or weigh-out information, if available. If not available, NMFS would be able to contact the first-level buyer to obtain the missing information on a timely basis. Dealers in Hawaii are currently required to provide this information to fishermen they buy from, and dealers are also required to keep such records for six months from the time of the transaction (HRS §189-11). Packing slips frequently include more detailed information on the numbers of lobsters sold (in addition to weight) than is available through the present Sales and Transhipment Report. Information on live lobsters sales will also be provided through the proposed changes. The proposed changes will result in more detailed information, access to first-level buyer records, and improved methods for verification of logbook records.

Rejected alternatives:

Status Quo. The present system is familiar to industry, and provides most of the necessary economic and biological information. The system does not, however, require buyers to make data available to verify fishing logbook information. Fishermen are responsible for submitting detailed size information within 72 hours of landing, but this information is provided by the buyer, and is often not made available to the fishermen in time to meet the requirement.

Require independent reports from first-level buyers, and delete information on tail size categories from the report submitted by fishermen (a fisherman who sells directly from the vessel would, in this case, be the first-level buyer and be required to submit a detailed report like other first-level buyers). Buyers would be responsible for providing information that would help verify fishing logbook information, and obtain accurate economic and size composition information. The reporting burden to fishermen would decrease, and the 72-hr bind is eliminated. However, this alternative adds a mandatory reporting burden for the marketing sector. Registration and tracking of buyers would be difficult, substantially increasing administration and enforcement costs.

4.3 Impacts of Proposed Actions

This amendment is essentially administrative rather than regulatory in nature. The amendment will not directly affect or control fishing by permit holders. The harvest quota, size limits, gear restriction, and other measures to conserve lobster resources will not be affected by the amendment. Therefore, there will not be any specific impacts on the fishery. The amendment contains two framework procedures to make changes in the harvest quota formula parameters or to consider allowing a limited fishery when the forecast quota is zero. However, any such changes would be contingent on a determination, with appropriate analyses,

that the changes would be consistent with the objectives of the FMP and would not result in an unacceptable risk of overfishing. The evaluations would include an assessment of impacts on lobster stocks, protected species, and other marine resources.

4.3.a Biological impacts.

Impacts on Lobster Stocks: The proposed actions are not expected to result in any impacts on lobster stocks. The annual recruitment to the stock is highly variable, and it appears that environmental variations are far more responsible for this recruitment variability than the fishery. The lobster stocks would continue to be protected from overfishing by the quota and size limit system along with the area closures (waters less than 10 fathoms (18.29 m) and within 20 nm of Laysan Island), prohibition on retention of berried females, and escape vents for undersized lobsters. The quota formula approach would remain intact, with quotas based on the status of stocks. The changes proposed would increase the flexibility to respond to changes in the stocks and in new information about the stocks and their productivity. The changes also would provide flexibility to allow a fishery if the forecast quota is zero, but this would only occur if the Southwest RD and the Council concur that there is good cause for such a fishery and that the action will not result in, or substantially increase the risk of, overfishing the stocks. Elimination of the use-it-or-lose-it provision will also decrease the risk of low forecast or annual quotas being exceeded because of a greater number of fishermen being forced to fish to retain their permits than would otherwise be expected to participate in the fishery.

Impacts on Protected species: The FMP already contains a number of measures intended to prevent adverse impacts of the NWHI lobster fishery on protected species such as Hawaiian monk seals. Gear restrictions prevent entanglement of monk seals in the entry cone of lobster traps. Operators are required to notify NMFS 48 hours before departing from port, and must carry an observer when requested to do so by the RD. Logbooks require reporting of interactions with Hawaiian monk seals, sea turtles, and other protected resources, and no such events have been reported in recent years. The area closures are believed to contribute to this lack of interaction. By protecting the long-term productivity of the lobster stocks, the FMP also contributes to maintenance of forage for protected resources to the extent they may be dependent on lobster stocks. The changes in management proposed in this amendment are not expected to result in significant changes in fishery patterns or ultimate effort and catch by the fishery. Thus, no impacts on protected resources are expected.

Impacts on other biological and ecological resources: No additional impacts are expected on other living marine resources as a result of Amendment 8. The level of fishing and associated use of petroleum resources and discharge of waste products are not significant. As is presently the case, anchors of the vessels may

result in slight disturbance of bottom resources but the impacts will be insignificant.

4.3.b Economic impacts (including administrative costs).

No significant economic impacts are expected as a result of this amendment. There will be changes in reporting requirements, but the net effect is minimal. Some notification procedures will be simplified, but others will be added. No new costs will be imposed on domestic vessels, and the landing of lobsters in ports in the Council's area of concern will not be affected. Vessel operators will have greater freedom to decide whether to gear up for the lobster fishery since the "use-or-lose" provision would be eliminated. There could be a slight increase in total catch over time if the framework procedure results in allowing a limited fishery in years in which the forecast quota is zero. The analyses used for evaluating options under the framework process should include an assessment of the economic tradeoffs between allowing limited harvests during years of forecasted zero quota and totally closing the fishery for the year. This would involve comparing the expected present-day economic returns to the discounted future value of any production increases anticipated from closing the fishery.

This amendment will not have any impacts that meet the test for significance under Executive Order (EO) 12866. Future actions proposed under the framework procedures (see 4.2.b, 4.2.c) will be evaluated to determine if they will be significant under EO 12866.

There could be a slight increase in NMFS administrative costs to carry out the framework procedures. However, there would be a decrease in costs if future changes in management can be made without having to develop a full amendment to the FMP. The administrative burden associated with reporting requirements will be increased for NMFS and fishermen, but data quality and timeliness should improve.

4.3.c Social impacts.

No negative social impacts are expected as a result of this amendment. The Council has not proposed any significant new measures in this amendment affecting lobster fishermen. The removal of the "use-it-or-lose-it" requirement will increase the ability of fishermen to decide whether to fish for lobster or participate in alternative fisheries when stock availability is low. Removing the landing requirement may also increase the stability and maintain the composition of the fleet. Under the present provisions, permit holders may be forced to fish in order to retain their permits. If such fishing results in severe economic loss, the permit holders ability to remain in the fishery may be at risk.

5.0 RELATIONSHIP OF AMENDMENT 8 TO OTHER APPLICABLE US LAWS AND POLICIES

5.1 Administrative Procedure Act

A proposed rule to implement this amendment will be published for public comment after the NMFS receives the proposed amendment and regulations. At this time, the Secretary has not determined that the amendment is consistent with the national standards or other provisions of the Magnuson Act, and other applicable law. In making that determination, the Secretary will take into account the data, views and comments received during the comment period.

5.2 Coastal Zone Management Act

The Council has determined that this rule will be implemented in a manner that is consistent to the maximum extent practicable with the approved coastal zone management program of Hawaii. This determination has been submitted for review by the responsible state agency under Section 307 of the Coastal Zone Management Act.

5.3 Executive Order 12866

This amendment will not have any impacts that meet the test for significance under Executive Order (EO) 12866. Future actions proposed under the framework procedures (see 4.2.b, 4.2.c) will be evaluated to determine if they will be significant under EO 12866.

5.4 Endangered Species Act

The Council has determined that this action will have no significant adverse effect on any listed species, or the habitat of those species. The Council has submitted this determination to the NMFS for informal review under Section 7 of the Endangered Species Act.

5.5 Marine Mammal Protection Act

All fisheries in the Western Pacific Region fall into Category 3, meaning that fishermen must report interactions with marine mammals, but they are not required to obtain exemption certificates in order to fish. The Council determined that reclassification of any western Pacific crustacean fisheries is not necessary for the purposes of the proposed actions. The Council submitted this determination to the NMFS for review under Section 114 of the Marine Mammal Protection Act.

5.6 National Environmental Policy Act (NEPA)

This FMP amendment has been written and organized in a manner that meets NEPA requirements, and is intended to serve as an environmental assessment. The Council has determined that the proposed actions will not have a significant adverse impact on the human environment, so an environmental impact statement has not been prepared. The sections of this amendment that address specific NEPA requirements are:

§3 - background and need for action
§4.1 - proposed actions
§4.2 - comparison of proposed action and alternative
§4.3 - impacts of proposed actions

This amendment is essentially administrative rather than regulatory in nature. The amendment will not directly affect or control fishing by permit holders. The harvest quota, size limits, gear restriction, and other measures to conserve lobster resources will not be affected by the amendment. Therefore, there will not be any specific impacts on the fishery. The amendment contains two framework procedures to make changes in the harvest quota formula parameters or to consider allowing a limited fishery when the forecast quota is zero. However, any such changes would be contingent on a determination, with appropriate analyses, that the changes would be consistent with the objectives of the FMP and would not result in an unacceptable risk of overfishing. The evaluations would include an assessment of impacts on lobster stocks, protected species, and other marine resources.

5.7 Paperwork Reduction Act

This rule contains a collection of information requirement subject to the Paperwork Reduction Act. A notification requirement prior to offloading of the catch would be added. The sales report also would be modified by eliminating certain data elements. For purposes of estimating the maximum reporting burden, it is assumed that all 15 permit holders will take four trips per year. The maximum total burden of these reports would be an additional nine hours per year. These changes would be modifications of a collection of information previously approved by the Office of Management and Budget (OMB Number 0648-0214).

5.8 Regulatory Flexibility Act

This rule, if adopted, will not have a significant economic impact on a substantial number of small entities because no reduction in gross revenues is expected, the affected businesses will not be forced to engage in unprofitable fishing, and no investments are required to comply. As a result, a regulatory flexibility analysis was not prepared.

5.9 Executive Order 12612 (federalism)

The Council did not identify any federalism issues relative to the proposed actions. The affected states have been closely involved in developing this amendment, and the principal state officials responsible for fisheries management have not expressed federalism-related opposition to adoption of this amendment. Thus, the Council determined that preparation of a federalism assessment is not necessary.

5.10 Executive Order 12630 (takings implication)

The Council believes that the proposed actions will not significantly affect the use of any real or personal property.

5.11 Indigenous Peoples' Fishing Rights

There is no formal agreement between the US government and the indigenous people of the region that allocates preferential fishing rights to native people (i.e., Carolinian, Chamorro, Hawaiian and Samoan). The Council is now exploring the legality and necessity of granting such rights. At present, Amendment 8 does not appear to affect any native Carolinian, Chamorro, Hawaiian or Samoan cultural or religious practices.

5.12 Vessel Safety Considerations

The Council did not identify any vessel safety issues in the proposed actions. The US Coast Guard has been asked to review this amendment from the standpoint of vessel safety.

APPENDIX 1. Status of NWHI Lobster Stocks, 1993.

"Status of Lobster Stocks in the Northwestern Hawaiian Islands, 1993"

Administrative Report No. H-93-17

by

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Southwest Fisheries Science Center
Administrative Report H-93-17

STATUS OF LOBSTER STOCKS IN THE NORTHWESTERN HAWAIIAN ISLANDS, 1993

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ABSTRACT

Research trapping indicated that spiny lobster catch-per-unit effort (CPUE) increased slightly from 1992 to 1993 at Maro Reef and Necker Island. Spawning biomass at both areas also increased slightly during the period but remained low compared to earlier years of the fishery. Since spiny lobster population density at Maro Reef remains at critically low levels, fishing at Maro Reef in 1994 will most likely catch slipper lobster which are quickly depleted. A dynamic population model fit to the commercial fishery data from 1983 to 1992 estimated a preliminary 1994 harvest quota of 200,000 lobster (combined catch of spiny and slipper lobsters).

INTRODUCTION

Lobster have been commercially exploited in the Northwestern Hawaiian Islands (NWHI) since the late 1970s. The fishery expanded during 1975-85, and by the mid 1980s as many as 16 vessels were fishing for spiny lobster (*Panulirus marginatus*) and slipper lobster (*Scyllarides squammosus*) in the NWHI. Landings peaked in 1984 and gradually declined during 1985-89. A substantial decrease in lobster landings and catch-per-unit effort (CPUE) was observed 1990, prompting an emergency closure of the fishery. The Crustacean Fishery Management Plan (FMP) was subsequently amended to include an annual 6-month closed season (January-June), annual catch quota, and limited entry program. The annual quota is set at a level that provides an economically viable CPUE (1.0 lobster/trap-haul), while protecting spawning stock biomass from overharvest.

Based on the results of research and commercial test fishing during June-July 1992, the 1992 final quota was set at 438,000 lobster. During the 6-month fishing season 353,212 lobster were caught in 582,801 trap-hauls for an average CPUE of 0.61 lobster/trap-haul. A dynamic population model was used with the 1983-92 commercial data to simulate the response of the lobster population to fishery exploitation. This model indicated that recruitment had dropped at least 50% after 1989 and predicted that the NWHI lobster population would not recover sufficiently to allow a commercial fishery in 1993 (Haight and Polovina 1993). The fishery was subsequently closed for the 1993 season.

This, the ninth annual report on the status of lobster stocks in the NWHI, reports current lobster population research, and attempts to use research and commercial logbook data to forecast changes in the NWHI lobster population in response to various environmental and exploitation scenarios.

RESEARCH AGE-FREQUENCY DATA

Standardized research trapping was conducted from the NOAA ship *Townsend Cromwell* at Maro Reef and Necker Island from June 4 to June 30, 1993. Species composition, length frequency, sexual development, and CPUE data were collected at quadrats standardized temporally, spatially, and by gear type at both locations. Additional exploratory research trapping for juvenile spiny lobster was conducted from small boats in shallow lagoonal areas of Maro Reef. Length frequencies of spiny lobster were converted to age frequencies by applying a growth curve estimated by Polovina and Moffitt (1989). Based on this growth curve, recruitment of spiny lobsters to the fishery occurs at approximately age 3. Age specific CPUE values were calculated by

dividing the total number of spiny lobster in each age class by the total number of traps fished at each bank.

Maro Reef

A substantial reduction in research CPUE values of all age classes was first documented at Maro Reef in 1990 (Polovina 1991). This trend persisted through 1993 (Fig. 1). Fishing effort at Maro Reef declined during the latter period in response to the decline in the lobster standing stock. Average fishing effort dropped 64% during the 1990-92 period as compared to average effort during the years 1986-89. Systematic trapping in the shallows of Maro Reef lagoon was performed for the first time during the 1993 research cruise. Four sites, encompassing the span of the reef, were trapped in depths of 1-15 m. The age-specific CPUE distribution from the Maro shallows exhibits fairly uniform distribution. The CPUE values of all shallow age classes were markedly higher than those obtained from outside the lagoon on the commercial fishing grounds (Fig. 2). An interesting aspect of the shallow-water trapping was the discovery of a site which yielded a high percentage of sublegal spiny lobster (Fig. 3), which are typically scarce on the outside of the reef.

Necker Island

At Necker Island, research CPUE values for age-3 lobster dropped substantially from 1988 to 1990, and remained at a reduced level through 1993 (Fig. 4). The CPUE values for age-2 lobster at Necker Island remained relatively stable from 1986 through 1993 and are comparatively higher than the other age class CPUE values. To test whether age-2 sublegal spiny lobster CPUE at Necker Island could be used as a predictor of the abundance of legal lobster in the following year, age-2 spiny CPUE values were compared with average and maximum CPUE values of commercial legal-sized spiny lobster in the following year. Based on the research age specific catch frequency, it was assumed that the age-3 lobster comprised most of the legal-sized commercial catch during the period tested. Both Spearman rank and regressional correlation failed to find a significant relationship between the two variables.

SUBLEGAL SPINY LOBSTER CPUE - MANAGEMENT IMPLICATIONS

Sublegal spiny lobster appear to utilize the same habitat as the adults at Necker Island (Parrish and Polovina, in press). This sympatry increases the probability of sublegal lobster being caught in the commercial fishery. In 1992, sublegal spiny lobster comprised 57% of the total spiny lobster catch at Necker Island. By comparison, sublegal spiny lobster made up only 20% of the total spiny lobster catch at Maro Reef.

Some evidence exists that sublegal lobster may be preyed on by carangids (Gooding 1985) or sharks after release from a fishing vessel. Common thought in Hawaii has been that at a specific bank, a single group of large predators aggregate around a vessel and follow it from trap-string to trap-string, feeding on discarded lobster, eventually becoming satiated. To test this theory, 63 Grey Reef (*Carcharhinus amblyrhyncos*) and Galapagos (*Carcharhinus galapagensis*) sharks were tagged at Necker Island and Maro Reef during lobster trapping operations. Out of 235 sharks counted during trapping operations, only 10 tags were resighted. The majority (9/10) were resighted on the same day of tagging within 1.2 nmi from the tagging location. These tags were resighted on the same trap-line where tagging was performed. Only one resighting occurred after the vessel had moved between trap-lines; this individual was resighted 3 days after tagging, 11 nmi from the tagging location. The above data indicate that while groups of sharks may aggregate around a vessel during trapping operations, they most likely do not follow the vessel from one trapping location to the next around a specific bank. Thus, the pool of potential predators is larger than if a specific group of predators followed the vessel from location to location.

SPAWNING STOCK BIOMASS

Because of the closure of the 1993 fishing season, no data were available to calculate the spawning stock biomass per recruit (SSBR) as required by the FMP. An alternate approach, if research CPUE data are available for a given year, is to calculate an index of spawning stock biomass based on the ratio of the current year's spawning stock biomass (kg/trap-haul) to unexploited spawning stock biomass for the population. The first step in this process is to determine the size at the onset of sexual maturity. A convenient indicator of sexual maturity for female spiny lobster is the size (carapace length [CL]) at the onset of egg production. To determine this size, a hyperbolic tangent function (Tanh) (Polovina 1989) was fit to the proportion of females with eggs. To determine if density-dependent factors might be affecting the spawning biomass, the Tanh function was fit for three periods: 1977-79, 1985-88, and 1990-93. The years of 1977-79 represent a period of light exploitation and high population levels; the years of 1985-88 represent a period of heavy exploitation and a fishing-down of the population. During the years of 1990-93 population numbers declined and density was much less than during the first two periods. At Necker Island the size at onset of egg production dropped significantly from the 1977-79 period to the 1985-88 period and again from the 1985-88 period to the 1990-93 period. At Maro Reef the size at onset of egg production was not statistically different between the 1977-79 and 1985-88 periods, but dropped significantly by the 1990-93 period (Table 1). The 1990-93 CL values obtained from the Tanh function were then used to calculate an index of

spawning stock biomass. Spawning biomass at Maro Reef increased slightly from 1992 to 1993 but still remains critically low (Table 2.). Because of the reduced spiny lobster population at Maro Reef, commercial fishing in that area will most likely target slipper lobster. Slipper lobster have made up approximately 45% of the commercial catch at Maro Reef during the last 3 years of fishing. Although initial catch rates of slipper lobster at the beginning of a fishing season can be quite high, slipper lobster at Maro Reef are quickly depleted (Fig. 5). Spawning biomass at Necker Island also increased slightly from 1992 to 1993. Average spawning biomass at both Necker Island and Maro Reef in 1992 was approximately 23% of the pre-exploitation level (Table 2).

1994 COMMERCIAL FISHERY QUOTA METHODOLOGY AND PRELIMINARY QUOTA FORECAST

Commercial fishery data from the NWHI were used in a dynamic population model to investigate recent spiny and slipper population changes (see Haight and Polovina 1993). The model was fit to the pooled commercial CPUE data from 1983 through 1992 (Fig. 6). The resulting parameter estimates were: $R_{(1983\text{-}1989)}$ = 1.675×10^6 lobster/year, $R_{(>1989)}$ = 8.38×10^5 lobster/year, m = 0.456/year, q = 7.32×10^{-7}/trap-haul. Based on these parameters during the period 1983-89, an estimated 1.67 million lobster recruited to the fishery annually; however, after 1989 the recruitment dropped to approximately 838,000 lobster.

The biological production estimates resulting from the fit of the model were used to determine the number of lobsters which could be taken under present recruitment conditions while allowing the stocks to rebound to a sustainable level and provide an average combined legal spiny and slipper CPUE of 1.0 during the fishing season. The resulting quota equation is as follows:

$$Quota_i = Catch_{(opt)} + [N_i - N_{(opt)}], \quad (3A)$$

where $Quota_i$ = the combined spiny and slipper lobster quota in year i. Based on an annual average CPUE of 1.0, $Catch_{(opt)}$ = 200,000 and $N_{(opt)}$ = 1,420,700. N_i is determined from the equation:

$$N_i = CPUE_i/q, \quad (3B)$$

where q is the population model estimate of catchability, and $CPUE_i$ is the combined legal spiny and slipper catch-per-unit effort during the first month of fishing (July 1994).

To provide a preliminary estimate of the July-December 1994 NWHI commercial lobster quota, the dynamic population model was used to estimate a CPUE value for July 1994 ($CPUE_i$). The

estimated $CPUE_i$ value (1.037), was then used in equation 3B, resulting in an N_i value of 1,420,000. The N_i value was used with equation 3A which gave a preliminary 1994 fishing season forecast of approximately 200,000 lobster (90% confidence interval 0-480,000 lobster). A final in-season quota will be determined from Equations (3B) and (3A), where $CPUE_i$ is estimated from a combination of preseason research data and/or commercial logbook data from the first month of fishing.

CITATIONS

Gooding, R. M.
1985. Predation on released spiny lobster, *Panulirus marginatus*, during tests in the Northwestern Hawaiian Islands. Mar. Fish. Rev. 47(1):27-35.

Haight, W. R., and J. J. Polovina.
1993. Status of lobster stocks in the Northwestern Hawaiian Islands, 1992. Honolulu Lab., Southwest Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Sci. Cent. Admin. Rep. H-93-04, 23 p.

Parrish, F. A., and J. J. Polovina.
In press. Habitat thresholds and Bottlenecks in production of the spiny lobster (*Panulirus marginatus*) in the Northwestern Hawaiian Islands. Bull. Mar. Sci. 54(1).

Polovina, J. J.
1991. Status of lobster stocks in the Northwestern Hawaiian Islands, 1990. Honolulu Lab., Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Cent. Admin. Rep. H-91-04, 16 p.

Polovina, J. J.
1989. Density dependence in the spiny lobster, *Panulirus marginatus*, in the Northwestern Hawaiian Islands. Can. J. Fish. Aquat. Sci. 46:660-665.

Polovina, J. J., and R. B. Moffitt.
1989. Status of lobster stocks in the Northwestern Hawaiian Islands, 1988. Honolulu Lab., Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Cent. Admin. Rep. H-89-03, 10 p.

Table 1.--Length at onset of egg production for 1977-79, 1985-88 and 1990-93. CL = carapace length (SE in parentheses). *N* denotes sample size.

	1977-79			1985-88			1990-93		
Location	*N*	CL	(SE)	*N*	CL	(SE)	*N*	CL	(SE)
Necker Island	2545	65.5	(0.8)	1568	60.4	(0.9)	2939	50.7	(0.4)
Maro Reef	1534	69.4	(1.4)	2818	69.1	(1.8)	499	51.3	(2.7)

Table 2.--An index of spawning stock biomass (kg/trap-night) for spiny lobster.

	Index by year						
	1977	1988	1990	1991	1992	1993	1993/ 1977
Necker Island	2.45	1.24	0.65	0.65	0.88	0.89	**0.37**
Maro Reef	2.14	1.71	0.36	0.20	0.16	0.17	**0.08**
Mean	2.29	1.48	0.51	0.43	0.52	0.53	**0.23**

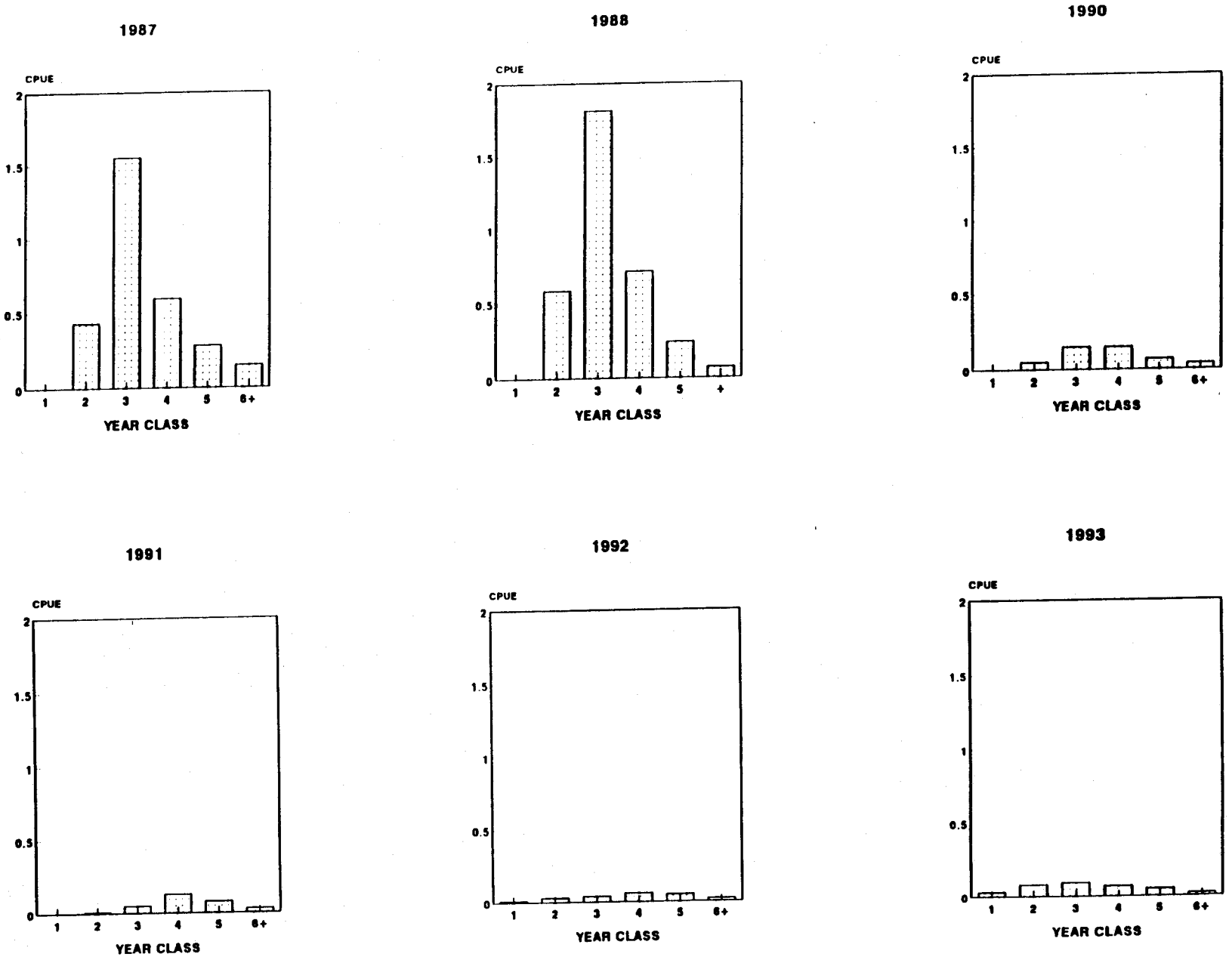

Figure 1.--Catch-per-unit effort for each age class of spiny lobster, Maro Reef, 1987-88, 1990-93.

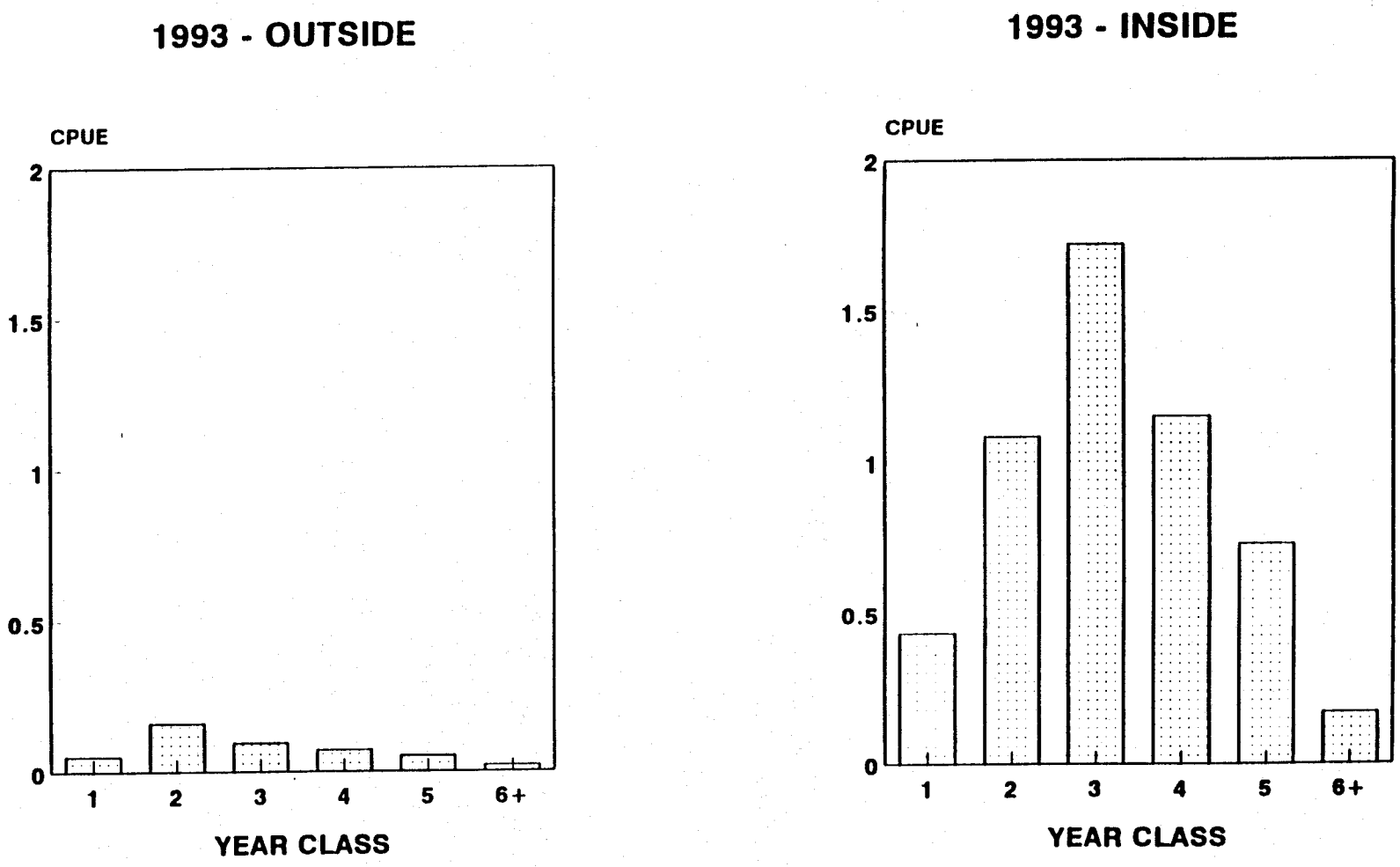

Figure 2.--Catch-per-unit effort for each age class of spiny lobster, inside vs. outside Maro Reef, 1993.

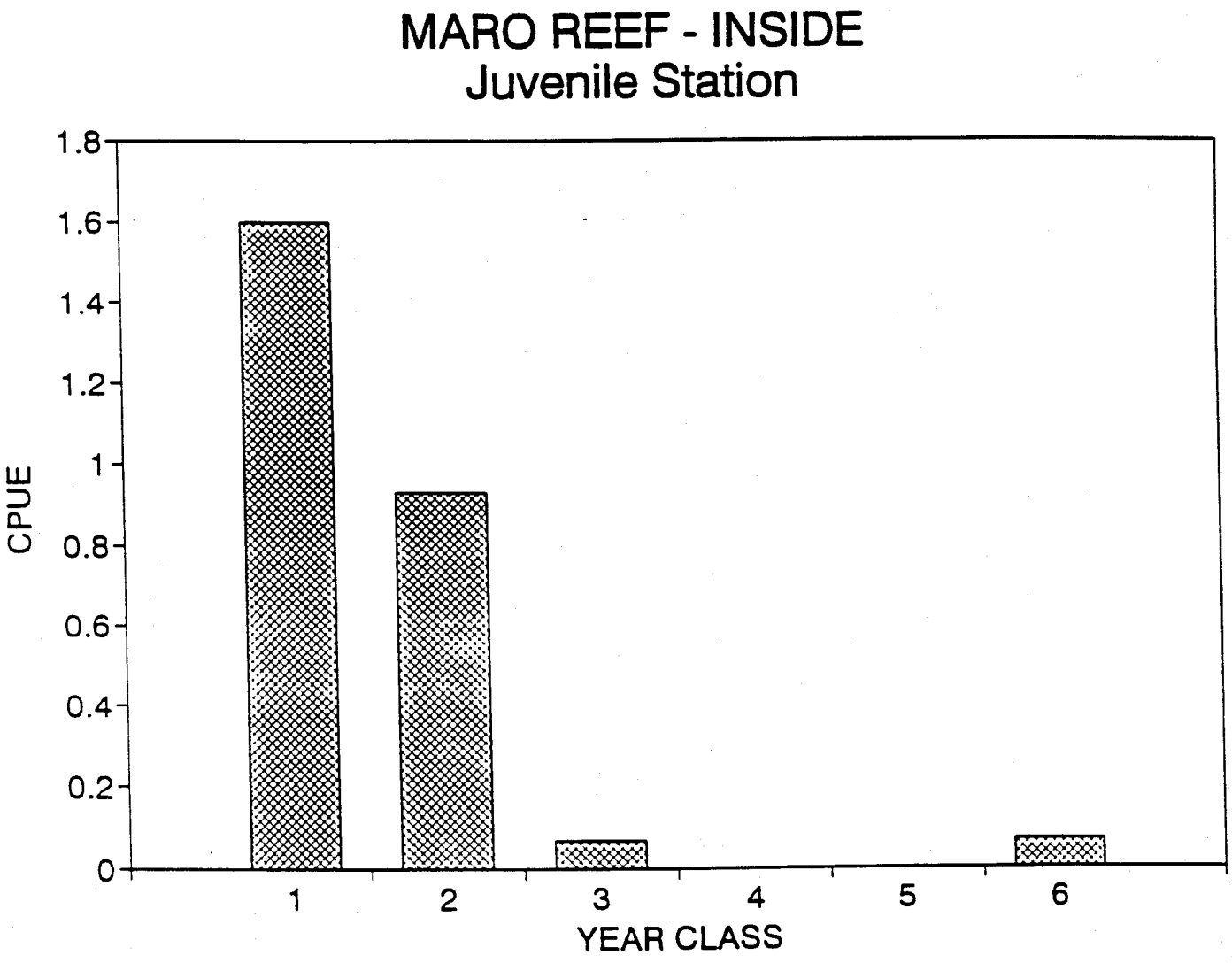

Figure 3.--Catch-per-unit effort for each age class of spiny lobster, Maro Reef, Station 197, 1993.

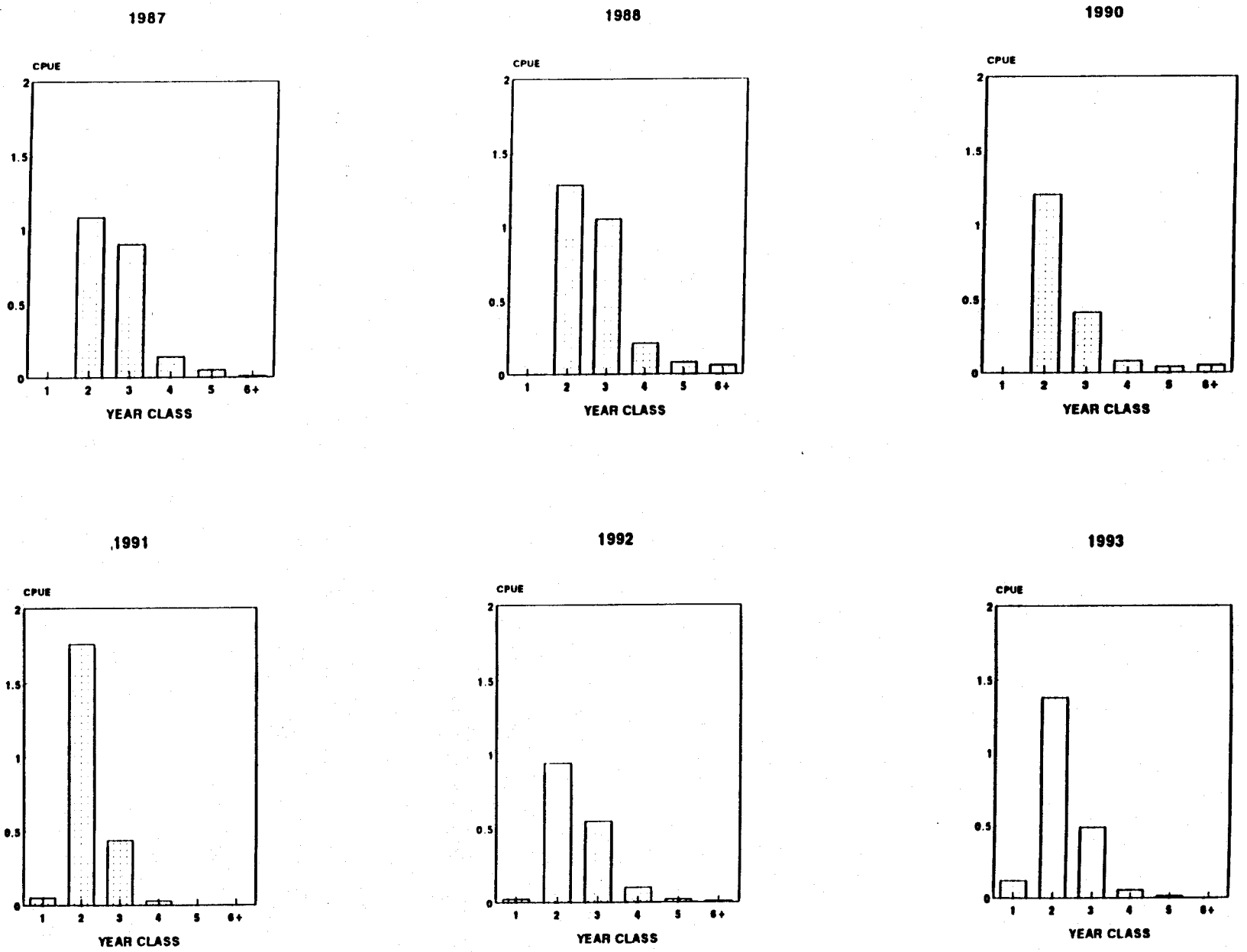

Figure 4.--Catch-per-unit effort for each age class of spiny lobster, Necker Island, 1987-88, 1990-93.

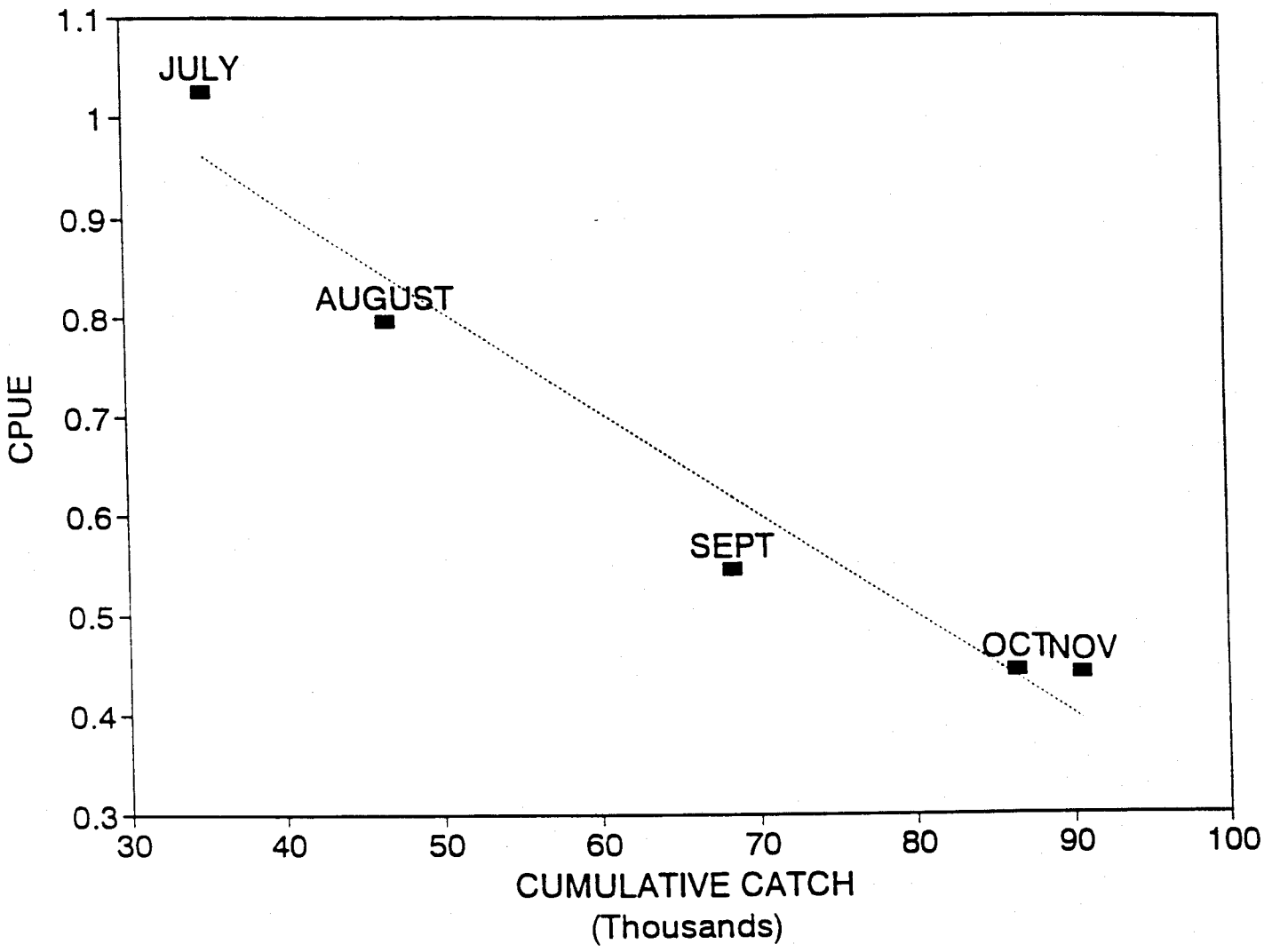

Figure 5.--Slipper lobster catch-per-unit effort vs. cumulative catch at Maro Reef during July-November 1992.

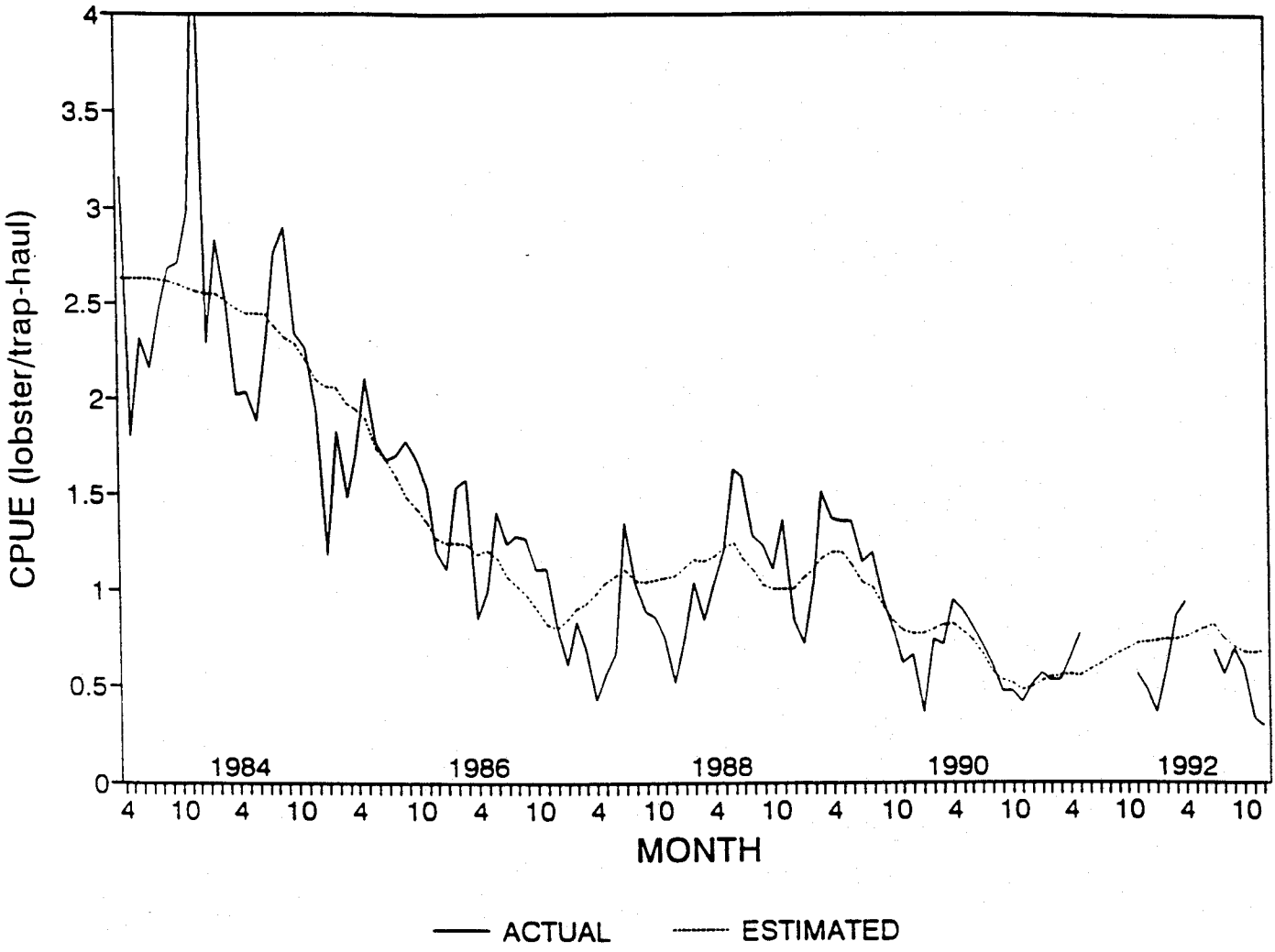

Figure 6.--Monthly catch-per-unit effort (CPUE) and fit of the dynamic population model for spiny and slipper lobsters based on commercial fishery data, 1983-92. After 1989, the estimated CPUE reflects a 50% reduction in model-based recruitment.

APPENDIX 2. Annual Report on the 1992 Western Pacific Lobster Fishery

"Annual Report of the 1992 Western Pacific Lobster Fishery"

Administrative Report No. H-93-09

by

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Southwest Fisheries Science Center
Administrative Report H-93-09

ANNUAL REPORT OF THE 1992 WESTERN PACIFIC LOBSTER FISHERY

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PREFACE

The Fishery Management Plan (FMP) for the western Pacific crustacean fisheries was prepared by the Western Pacific Regional Fishery Management Council (WPFMC) and went into effect in 1983. Lobster permits are issued by the Regional Director, Southwest Regional Office, National Marine Fisheries Service (SWR, NMFS). These permits allow lobster fishing operations in the U.S. Exclusive Economic Zone (EEZ) from 3 to 200 nmi offshore American Samoa, Guam, Hawaii, the Northern Mariana Islands, and U.S. possessions in the western Pacific. The Fishery Monitoring and Economics Program (FMEP) of the Honolulu Laboratory, Southwest Fisheries Science Center, NMFS, NOAA, collects biological and economic information exclusively from vessels permitted to fish in the Northwestern Hawaiian Islands (NWHI). All information presented in this report pertains only to NWHI. Information on other areas is confidential because less than three Federally permitted lobster vessels fished in any of those areas.

In addition to the FMEP, other NMFS agencies contributed to this report. The Insular Resources Investigation of the Honolulu Laboratory provided a summary of the biological research and assessment on the fishery (Haight and Polovina 1992), and Alvin Z. Katekaru of the Southwest Region, Pacific Area Office (PAO), NMFS, provided information on administrative activities. Dick Phillips of Phillips Sales contributed marketing and economic information, Robert F. Harman of the Council's staff prepared information on Council-related activities, and Southwest Enforcement (SWE), NMFS, furnished details on enforcement operations.

CONTENTS

INTRODUCTION

The Northwestern Hawaiian Islands (NWHI) are an isolated range of islands, islets, banks, and reefs which extends 1,500 nmi northwest of the main Hawaiian islands from Nihoa Island to Kure Atoll (Fig. 1). The commercial lobster fishery has operated in the NWHI for almost 16 years. This fishery targets primarily two species: spiny lobster, *Panulirus marginatus*, and common slipper lobster, *Scyllarides squammosus* (henceforth referred to as slipper lobster), which dominate commercially. Two other species--green spiny lobster, *P. pencillatus*, and ridgeback slipper lobster, *S. haanii*, are caught incidentally.

This report details commercial lobster fishing activity in the exclusive economic zone (EEZ) of the NWHI. Current catch, effort, and revenue statistics are based on Federal logbook data and revenue reports. Statistics are presented for the main target species in tabular format, and brief summaries illustrate key points. Evaluations of current conditions of the fishery also are provided. This report concludes with separate sections on administrative and enforcement activities in the fishery.

RECENT DEVELOPMENTS

Several events occurred during 1992 that were of consequence to the NWHI lobster fishery. One of the most significant was the Secretary of Commerce's approval of Amendment 7 to the FMP. This amendment established a 6-month seasonal closure, a limited entry program, and a process (incorporating a formula) to set a total allowable catch (TAC) or fleet-wide quota for the lobster fishery (see Council activities for further details). Consequently, 1992 became the first year the fishery has ever been regulated by a quota system, with the fishing season beginning on July 1, 1992.

Substantial declines in the NWHI commercial lobster CPUE in 1990 and early 1991 caused concerns among scientists and the lobster industry that the fishery had been overexploited.[1] This occurrence was examined by NMFS insular resources staff in early 1992 using NWHI commercial fishery data. They determined that a target fleet catch-per-unit effort (CPUE) of 1.0 lobsters per trap haul, in combination with other management measures, would provide adequate protection for the stocks and allow sustainable exploitation. A CPUE-based population model was used to calculate the 1992 TAC which could be taken under normal recruitment levels to allow a recovery to sustainable yields,

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[1]Polovina et al. (1993) provide an alternative, environmental explanation for this decline.

after a simulated 6-month closed season, while providing an average combined legal spiny and slipper CPUE during the fishing season of 1.0 lobsters per trap-haul.

This quota was initiated in two steps. First, to calculate the July-December 1992 quota, fourth quarter 1991 commercial lobster fishery data and estimated commercial lobster landings during the first quarter of 1992 were used in the CPUE-model with estimates of lobster recruitment and mortality to predict a CPUE value (1.08) for July 1992. This value was then used to estimate the preliminary 1992 NWHI commercial lobster (spiny and slipper) quota or forecast of 750,000 (Haight and Polovina 1992). Second, the final quota was set at 438,000 lobsters for the year, which was determined by the number of legal lobsters caught in the first month of the fishing season. This information was obtained via mandatory in-season, at-sea, call-in catch reports from NWHI lobster fishing vessels. These actual catch and effort figures provided an update on the vitality of the lobster stocks in the NWHI, confirming that they had not made any significant recoveries by the beginning of the 1992 fishing season. Consequently, the final quota was only 58% of the preliminary quota forecast.

The fishing vessel call-in information was very functional in expediting information to establish the final quota. However, the procedures and end results presented some obstacles. One of the most evident problems was that the call-in reports and daily logbook information recorded by vessel operators were not in full accord for all vessels. Resolution of the differences would have been improved noticeably if the total numbers of lobsters landed had been monitored by SWE personnel during vessel off-loading operations. Other problems with this system could be remedied if prearranged call-in schedules were strictly maintained for set days and weeks so that a cutoff date could be established for a predetermined period. As it is, there was much overlap from vessel operators reporting for disparate time periods.

Changes to the procedures for recording and reporting of lobster catches were also initiated by July 1, 1992. These included modification of vessel logbooks that added information on general conditions of the sea surface for each day fished (e.g., wave height, wind speed), changes to vessel transhipment, and sales reports to include number of lobsters by tail weight (in 2-ounce intervals; i.e., 4-6, 6-8 oz), by species. Weight and revenue from sale of octopus by product type and weight and revenue from sale of other fishery products by type were also included.

Commercial NWHI lobster landings, revenue, and trap-hauls more than doubled in 1992 compared to 1991, although the fishery was closed for 3 months during the spring and early summer. The final totals, however, were still only about half the performance of previous years with the combined legal CPUE for 1992

displaying no significant improvement over the drop in CPUE during 1990-91.

Another interesting occurrence in the 1992 fishery was that the number of legal slipper lobsters caught quadrupled, and the revenue more than tripled compared to 1991. This was a good sign to many industry personnel who were concerned that the slipper lobster population had been nearly decimated in previous years.

LANDINGS AND REVENUE

The total combined landings of legal lobsters in pounds in 1992 (wet weight) and ex-vessel revenue are shown in Table 1. NWHI fleet landings and revenue of spiny and slipper lobsters in pounds and metric tons (t) are presented in Table 2. [Tables 1 and 2 contain updates from Clarke et al. (1988), Clarke (1989), and Landgraf et al. (1990).] Estimated landings, ex-vessel prices, and ex-vessel revenue by product type (frozen tails, frozen whole, and live) are shown in Table 3. The long-term trend in annual landings is shown in Figure 2. Long-term revenue is shown in Figure 3.

During January-April 1992, 71,200 lobsters were landed, worth $376,192, while in the July-December 1992 fishing season 353,200 lobsters (81 percent of the final quota) worth $1,716,808 were landed.

FISHING EFFORT

Fishing effort increased in 1992 but was still lower than during 1985-1991 (Figure 4). Annual fishing data show that the number of fishing days more than doubled in 1992 (Table 4) compared to 1991 (Table 5). During January-April, 138,800 traps were hauled compared to 582,800 trap-hauls completed (80 percent of the effort) during the third and fourth quarters.

Out of the 15 vessels allotted limited entry lobster permits under the new management system in 1992, only 12 vessels fished. Three participated in other fisheries and 1 vessel sank en route to fishing grounds in September 1992. During the first quarter, only 4 vessels fished, completing 6 trips, whereas 8 vessels completed 22 trips during the July-December season.

The average number of trap-hauls per fishing day for 1992 was 808, a 15% increase from the 1991 average of 687. Effort was concentrated on three banks--Gardner Pinnacles, Necker Island, and Maro Reef and is reflected in the CPUE by area (Table 4).

CPUE

Table 4 shows CPUE by area for 1992 except for confidential data which is combined under "other" because less than three vessels fished in those areas.

Combined CPUE increased slightly in 1992 (5%) but with a CPUE of 0.59 still failed to compete with the totals of previous years (Figure 5). The CPUE for legal spiny lobsters declined to 0.36 but almost doubled to 0.23 for legal slipper lobsters (Table 4).

Commercial lobster fishing logbooks for the first quarter of 1992 indicated that CPUE was 0.51 for legal lobsters per trap-haul, the lowest recorded during that period since 1983 (when such data was first recorded). By comparison, the CPUE for the same period in 1990 and 1991 was 0.84 and 0.54, respectively.

Analyses of research and fishing logbook data have indicated that recruitment of lobster to the NWHI varies considerably between banks. Necker Island recruitment has remained fairly strong since 1985. Necker Island had a legal spiny lobster CPUE of 0.38 in 1992 (slightly higher than the other areas). Gardner Pinnacles followed with a CPUE of 0.37, and Maro Reef was third with a 0.35 CPUE (Table 4). Historically, Maro Reef accounts for approximately 40% of the catch from the NWHI but has had comparatively low CPUE since 1990, although the number of legal slipper lobsters increased dramatically this year with a CPUE of 0.65 compared to the 1991 showing of 0.16.

VESSEL OPERATIONS

Sea-day analysis of the NWHI lobster fleet in 1992 is reported only in unadjusted modes (Table 6). In previous annual reports, adjusted data on annualized trip activity was presented by deleting incomplete or experimental trips and by projecting partial year participation for individual vessels to a full year's activity. However, adjusted data were not included the past 2 years because of the fishery closures. Based on unadjusted data, the number of fishing days per vessel was higher for all classes of vessels for 1992 compared to 1991. Operations from participating class I vessels are not included in the vessel operation figures because fewer than three vessels fished.[2]

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[2]Vessels were categorized into size, activity, and class by Clarke and Pooley (1988): classes I and I-S are the largest vessels.

ECONOMIC INFORMATION

Prices in 1992 were fairly strong, with an average of around $14 per pound for frozen spiny lobster tails (about $2.20 lower than 1991) (Figure 6). The range of prices varied substantially in 1992, with high prices around $19 per pound for spiny lobster tails and lows around $8 lb for slipper lobster tails. This increased range frequently represents marketing variation due to low supply. Spiny lobster tails have been getting smaller every year but this year has been an exception because more large lobsters (7-10 years old) than ever have been caught.

In recent years Hawaiian spiny lobster tails have been increasingly marketed as a competitive product for the high quality cold-water lobsters from New Zealand, West Australia, South Australia, and South Africa. The market for these cold-water lobster tails was already in the early stages of a severe price decline at the beginning of 1992, and the decline continued for the entire year. Prices were severely depressed for the smaller tails (4-8 oz), with West Australian "B" size (6-8 oz) falling in price to the wholesale trade, from almost $25 per lb in October 1991 to less than $15 per pound by the end of 1992. During 1992 only 9-12 oz sizes resisted the price free-fall, and even these sizes experienced price declines of up to 20%.

During 1992, the market for Hawaiian spiny lobster tails dramatically changed. In January 1992, the highest ex-vessel prices paid in the fishery were around $18.80. Since the competing cold-water tails were in the early stages of a long and severe price decline, the Hawaiian ex-vessel prices rather quickly fell to $16.50-16.00 per lb before the season closed in the spring. When the first landings appeared from the July-December 1992 season, the ex-vessel prices for the larger (12 oz plus) Hawaiian spiny tails fell to about $12 per lb, although the other sizes remained in the $13-14 range. Some fishing vessels with consignment marketing arrangements and some with marketing incentive programs did somewhat better than the cash sellers.

The supply situation for the Hawaiian spiny tails also changed significantly during 1992. In the early part of the year there was a severe shortage of tails larger than 8 oz. There was an oversupply of 4-6-oz tails, and price cutting was common for more than 6 months. By mid-to-late 1992 there was an oversupply of larger tails (12 oz and larger). By the end of the year, price cutting was occurring for all Hawaiian tails larger than 8 oz. Because of the relatively modest quantities of smaller tails landed in late 1992, tails 8 oz and smaller ended the year in very short supply and with firm prices. Live landings of spiny lobsters amounted to about 3% of the total spiny lobster landings (whole weight) with an average price of $9.80.

The 1992 market for Hawaiian slipper lobster tails was unpredictable. Since there is only one closely competitive product (the Brazilian slipper lobster, *S. brasiliensis*), the effect of competitive products on Hawaiian slipper tail prices tends to be insignificant. However, because of relatively poor Hawaiian slipper tail landings in 1990 and 1991, there was virtually no significant market for these tails in mid-to-late-1992. Therefore, ex-vessel prices tended to be low (in the $8 per pound range) with a few smaller trips which were sold for slightly higher prices. There were approximately 2,100 lbs of live slipper lobsters landed with an average price of $9.62 per lb.

During the course of the year, the market for Hawaiian slipper lobster tails was rehabilitated somewhat, and the year ended with modest inventories and very firm prices.

BIOLOGICAL ASSESSMENT

Analyses of commercial fishery data from 1983 through 1992 indicated that recruitment to the lobster fishery dropped 50% after 1989 (Fig. 7) (Haight and Polovina 1992). Recent research suggests that productivity has declined for a number of NWHI species besides lobsters (i.e., seabirds, monk seals, and reef fish). Data indicate that a significant change in the physical marine environment occurred in the North Pacific during the late 1970s to 1990, then returned to normal levels by the early 1990s. This period was characterized by stronger winds and deepening of the mixed surface layer and depth of the 15-degree isotherm (i.e., warm surface water extended further down). It also suggests that the entire subtropical circulation gyre shifted southward during this period (Polovina et al. in prep).

There is some evidence that lower lobster recruitment levels may also be a result of a reduction in lobster spawning biomass. Results of forward simulation population modeling incorporating reduced recruitment suggest that the lobster stocks may take at least 2 years to rebuild to FMP-mandated CPUE levels and that future exploitation of the NWHI lobster population should be at lower levels than during the 1983-89 period. Therefore, to attain a long-term season CPUE of 1.0, the fishery will probably run a 30% risk of a closure in alternate years. Current analysis suggests that the NWHI lobster stocks will not have recovered sufficiently to allow a commercial fishery in 1993. Therefore, the preseason quota forecast is 0 lobster.

RESEARCH

Biological Research

In the NWHI ecosystem, biological time series data collected since the 1980s on lobsters, monk seals, sea birds, and reef fishes all showed declines in productivity of 30-50% from the early 1980s to the early 1990s (Polovina et al. in prep). All available data are consistent with the hypothesis that this physical change resulted in higher biological productivity which reached a maximum in the early 1980s and has now returned to long-term levels. Recent observed declines in productivity at higher trophic levels represent a response to the return to lower, long-term primary productivity.

Long-term (decadal-scale) environmental regimes (e.g., broad-scale circulations and vertical mixing patterns) may have major impacts on the productivity of commercial marine resources (e.g., lobsters, swordfish) and endangered species (e.g., monk seals) independent of the fisheries themselves.

ENDANGERED AND THREATENED SPECIES INTERACTIONS

Summaries of interactions with endangered and threatened species in the NWHI lobster fishery are based on information received from the daily lobster catch reports and outlined in Table 7. In August 1992, the duties of monitoring the protected species interactions were undertaken by the PAO.

No occurrences of actual physical interactions were reported, and the degree to which interactions are underreported is unknown. The numbers of sightings or interactions shown on log book reports are not necessarily an accurate indicator of the actual number of encounters between the fishery and protected species.

COUNCIL ACTIVITIES

The WPFMC is the policy-making organization for the management of fisheries in the EEZ around American Samoa, Guam, Hawaii, the Northern Mariana Islands and other U.S. possessions in the Pacific. The WPFMC prepares and modifies Fishery Management Plans (FMPs) for domestic and foreign fishing in the region, based on advice from scientific and industry advisors as well as input from the general public. Regulations are administered by the NMFS and are enforced jointly by NMFS agents and the U.S. Coast Guard. The FMP for crustaceans (primarily lobster) was implemented in 1983 and has been amended seven times as conditions in the fishery have changed.

In 1992, Amendment 7 to the FMP established a new system of management for the NWHI lobster fishery. Entry to the fishery would be limited to 15 vessels, with limited entry permits being freely transferable, the fishing season would be closed for six months (from January through June); the fleet would be restricted to a TAC, or fleet quota, and each vessel could use no more than 1,100 traps. The final rule implementing the amendment was published in the Federal Register on March 26, 1992 (57 fr 10437). The fishery was closed on April 10, 1992, and the remaining regulations took effect on April 27, 1992. The regular season then opened on July 1, 1992.

Before the new management system took effect, the Council's Crustacean Plan Team met in February 1992 to discuss several alternative management strategies and to make recommendations to the Council. The options discussed included a fishery for male lobsters only, increasing the legal minimum size, opening Laysan Island to lobster fishing, rotating closed areas in the NWHI, individual quotas, changing the definition of overfishing in light of the importance of lobsters as prey for Hawaiian monk seals, and separate quotas for slipper and spiny lobsters. At that time, the Team recommended that the Council take action on none of those options. The Team did provide recommendations on methods for marking lobster traps and for the reporting procedures used by fishermen to call in their catch to be counted against the fleet quota. WPFMC's Scientific and Statistical Committee concurred with the Team's recommendations, and the Council took no action to change the management system but did suggest that the Team review the fishery after the 1992 season to determine whether refinement of the management system would be needed.

In September 1992, the Council requested its staff to organize a meeting in January 1993 for the Plan Team, Advisory Panel, NWHI fishermen, and enforcement agents. The purpose of the meeting was to review the operations details of the 1992 fishery and recommend any changes to the Council at its April 1993 meeting.

ADMINISTRATIVE ACTIVITIES

Under the newly established limited entry program for the NWHI lobster fishery, the Regional Director, Southwest Region, NMFS issued 15 permits to vessel owners who had applied for and qualified for permits (Table 8).

Issuance of initial limited entry permits--restricted to a maximum of 15--was based primarily on three eligibility criteria and a point system as specified by federal regulations (50 CFR §681.30). Priority for permit issuance was given to (in descending order): (1) an owner of a vessel that made at least one landing of lobster from the NWHI before August 8, 1985, and

during every calendar year from 1985 through 1990; (2) an owner of a vessel that made at least one landing of lobster from the NWHI before August 8, 1985, and during calendar year 1990; and (3) an owner of a vessel that made at least one landing of lobster during 1990 only.

ENFORCEMENT ACTIVITIES AND VIOLATIONS

At-sea enforcement efforts in 1992 consisted of 4 aerial patrols conducted with U.S. Coast Guard aircraft. The Enforcement Division has primarily relied on dockside enforcement at the time of off-loading to determine compliance with the regulatory requirements of the management plan. It was the intention of the SWE during the 1992 season to provide an accurate and thorough boarding of as many of the returning lobster vessels as possible under the new management regime. This goal proved difficult to attain because of the uncertainty of exact unloading locations and times by vessels returning to Honolulu. All vessels fishing under this plan are still required to notify the Coast Guard and the NMFS Office of Enforcement 24 hours prior to landing their catches. This requirement was not sufficient to provide agents with timely and cost-effective scheduling to accomplish the boarding. On one occasion two agents worked through a holiday in an effort to deliver a timely boarding only to find that the vessel in question had stopped in Kauai and, therefore, its arrival in Honolulu was delayed.

NMFS Enforcement is concerned about the timeliness of inspections. In an effort to provide a minimum of interference to vessel off-loading procedures, SWE has asked vessel operators precisely when they will unload in order to provide a valid and timely work product.

During 1992, nine lobster vessel boardings were accomplished. These boardings and subsequent investigations resulted in detecting violations and assessing penalties in six cases. One vessel was cited for possessing lobster traps in the NWHI during closed season, one vessel was cited for failure to report landing, two vessels were cited for possession of short lobster tails, and two vessels were cited for possession of egg-bearing lobsters.

Over 400 investigative hr were expended by NMFS special agents exclusively on the crustacean FMP. This does not include the estimated 200 hr expended by deputized officers from the Hawaii Marine Patrol and the Department of Conservation and Resource Enforcement. The task of checking every lobster tail from selected loads of commercial lobster vessels during off-loading operations was accomplished with the assistance from the State of Hawaii, Department of Conservation and Resource Enforcement, and the State of Hawaii Marine Patrol.

Intensive dockside enforcement will continue as the most effective method of enforcing the provisions of this management plan.

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CITATIONS

Clarke, Raymond P.
1989. Annual report of the 1988 western Pacific lobster fishery. Honolulu Lab., Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Cent. Admin. Rep. H-89-5, 28 p.

Clarke, Raymond P., and Samuel G. Pooley.
1988. An economic analysis of Northwestern Hawaiian Islands lobster fishing vessel performance. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-SWFC-106, 46 p.

Clarke, Raymond P., and Stacey S. Yoshimoto.
1990. Application of the Leslie model to commercial catch and effort of the slipper lobster, *Scyllarides squammosus*, fishery in the Northwestern Hawaiian Islands. Mar. Fish. Rev. 52(2):1-7.

Clarke, Raymond P., Samuel G. Pooley, Peter A. Milone, and H. E. Witham.
1988. Annual report of the 1987 western Pacific lobster fishery. Honolulu Lab., Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Cent. Admin. Rep. H-88-5, 48 p.

Haight, Wayne R., and Jeffrey J. Polovina.
1992. Status of lobster stocks in the Northwestern Hawaiian Islands, 1991. Honolulu Lab., Southwest Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Sci. Cent. Admin. Rep. H-92-02, 21 p.

Landgraf, Kevin C., Samuel G. Pooley, and Raymond P. Clarke.
1990. Annual report of the 1989 western Pacific lobster fishery. Honolulu Lab., Southwest Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Cent. Sci. Admin. Rep. H-90-6, 30 p.

Parrish, Frank A., and T. K. Kazama.
1992. Evaluation of ghost fishing in the Hawaiian lobster fishery. This has been published in Fishery Bulletin.

Polovina, Jeffrey J.
1991. Status of lobster stocks in the Northwestern Hawaiian Islands, 1990. Honolulu Lab., Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Southwest Fish. Cent. Admin. Rep. H-91-04, 16 p.

Polovina, Jeffrey J., Gary T. Mitchum,, Nick E. Graham, Edward DeMartini, Elizabeth Flint, and Mitchell Craig. In prep. Interdecadal physical and biological variation and linkages in the Central North Pacific.

Table 1.--Annual landings (number and pounds), ex-vessel revenues (US$), fishing effort (trap-hauls, vessels, and trips), catch-per-unit effort (CPUE; number of legal lobster per trap-haul), and prices (US$/lobster) of slipper and spiny lobsters combined from the Northwestern Hawaiian Islands, 1977-92. Data are from vessel logbooks and revenue reports for 1983-92, and from NMFS shoreside monitoring from 1977-83.

Year	Landings		Revenue[b]	Trap-hauls	Vessels	Trips	Combined	Price/
	No.	Pounds[a]	($)	(No.)	(No.)	(No.)	legal CPUE[c]	lobster
1977	--	72,000	209,000	--	5	14	--	--
1978	--	45,000	135,000	--	2	12	--	--
1979	--	100,000	320,000	--	2	6	--	--
1980	--	328,000	1,114,000	--	3	12	--	--
1981	--	780,000	2,730,000	--	10	25	--	--
1982	148,214	187,000	673,000	47,738[e]	7	19	3.10	4.54
1983[d]	234,700	203,000	591,000	84,870	4	19	2.77	2.52
1984	872,400	1,017,000	2,624,000	363,000	11	38	2.40	3.01
1985	1,812,700	2,368,000	5,887,000	983,062	16	62	1.80	3.21
1986	1,787,400	2,202,000	3,982,000	1,352,580	16	60	1.32	3.35
1987	737,800	969,000	3,988,000	804,723	11	38	0.92	5.41
1988	1,057,600	1,405,000	5,000,000	845,200	9	28	1.25	4.73
1989	1,160,250	1,470,000	6,291,000	1,071,538	11	33	1.08	5.42
1990	774,300	949,000	4,887,000	1,182,485	14	45	0.66	6.31
1991	166,700	183,000	1,028,000	296,648	9	21	0.56	6.16
1992	424,400	466,000	2,093,000	721,682	12	28	0.59	4.93

[a]Includes the weight of frozen lobster tails expanded to represent whole weight (spiny lobster tail weight = 35.6% of whole weight; slipper lobster tail weight = 33.3% of whole weight).
[b]Revenue is reported on a per-trip basis. Some trips overlap years; revenue for those trips is prorated to each year.
[c]Legal CPUE for slipper lobster before 1988 is calculated as 0.72 multiplied by the number of retained slipper lobsters.
[d]The 1983 annual values were estimated from logbook returns from the last 9 months of the year.
[e]Estimate is from Clarke and Yoshimoto (1990).

Table 2.--Estimated landings, ex-vessel prices (US$/lb), and ex-vessel revenues (US$) of spiny and slipper lobsters landed from the Northwestern Hawaiian Islands, 1977-92. Data are from vessel logbooks and revenue reports for 1983-92, and from NMFS shoreside monitoring from 1977-83.

	Spiny lobster				Slipper lobster			
Year	Pounds[a]	Metric tons	Price ($/lb)	Revenue ($)	Pounds[b]	Metric tons	Price ($/lb)	Revenue ($)
1977	72,000	33	2.90	209,000	--	--	--	--
1978	45,000	20	3.00	135,000	--	--	--	--
1979	100,000	45	3.20	320,000	--	--	--	--
1980	328,000	149	3.40	1,115,000	--	--	--	--
1981	780,000	354	3.50	2,730,000	--	--	--	--
1982	187,000	85	3.60	673,000	--	--	--	--
1983	203,000	92	2.91	591,000	--	--	--	--
1984	935,000	424	2.66	2,490,000	82,000	37	1.63	134,000
1985	1,438,000	652	2.94	4,227,000	930,000	423	1.78	1,660,000
1986	1,149,000	521	3.23	3,710,000	1,053,000	479	2.16	2,272,000
1987	530,000	241	4.67	2,479,000	439,000	200	3.44	1,509,000
1988	1,218,000	553	3.66	4,453,000	186,000	85	3.12	581,000
1989	1,266,000	574	4.44	5,624,000	203,000	93	3.28	667,000
1990	784,000	356	5.51	4,319,000	165,000	75	3.43	567,000
1991	150,000	68	6.06	911,000	33,000	15	3.54	117,000
1992	318,000	144	5.20	1,654,000	148,000	69	2.96	439,000

[a]Includes frozen lobster tails expanded to represent whole weight (tail weight = 35.6% of whole weight).
[b]Includes frozen lobster tails expanded to represent whole weight (tail weight = 33.3% of whole weight).

Table 3.--Estimated landings (product weight), ex-vessel price (US$/lb), and ex-vessel revenue (US$), by product type, from the Northwestern Hawaiian Islands, 1990-92. Data are from vessel revenue reports; dashes indicate that the data are not available or are confidential and therefore excluded.

			Spiny Lobster				Slipper Lobster					
Year	Product	Type	Pounds	Metric tons	Price ($)	Revenue ($)	Pounds	Metric tons	Price ($)	Revenue ($)	Vessels (No.)	Trips (No.)
1990	Live		57,900	26	7.27	421,300	6,000	3	6.66	41,000	6	16
	Frozen	Whole	500	--[a]	8.00	4,000	--	--	--	--	--	--
	Frozen	Tail	258,300	117	15.07	3,894,000	53,200	24	9.94	526,800	14	43
1991	Live		5,900	3	8.02	47,400	2,500	1	7.63	19,200	4	11
	Frozen	Whole	350	--[a]	10.49	3,700	--	--	--	--	--	--
	Frozen	Tails	51,300	23	16.77	859,900	10,000	5	9.61	97,900	9	14
1992	Live		10,100	--	9.77	98,700	2,100	--[a]	9.62	20,500	4	10
	Frozen	Whole	--	--[a]	--	--	--	--[a]	--	--	--	--
	Frozen	Tails	110,000	50	14.19	1,554,200	49,000	22	8.60	418,870	11	23

[a]Less than 1 metric ton landed.

Table 4.--Annual fishing effort (days fished and trap-hauls) and catch-per-unit effort (CPUE; number of lobster per trap-haul) for spiny and slipper lobsters in the Northwestern Hawaiian Islands, 1992. Data are from vessel logbooks.

Area	Days fished (No.)	Trap-hauls (No.)	Catch-per-unit effort							
			Spiny lobster				Slipper lobster			
			Legal	Sublegal	Berried	Total	Legal	Sublegal	Berried	Total
Necker	424	347,288	0.38	0.69	0.15	1.22	0.10	0.02	0.02	0.13
St. Rogatien Bank	4	1,140	0.04	0.01	0.01	0.06	0.12	0.03	0.01	0.17
Gardner Pinnacles	232	197,943	0.37	0.18	0.12	0.67	0.11	0.03	0.02	0.16
Maro Reef	179	138,851	0.35	0.10	0.06	0.52	0.65	0.23	0.13	1.01
Other[a]	54	4,700	0.12	0.03	0.03	0.18	0.26	0.06	0.03	0.35
Total	893	721,682	0.36	0.40	0.12	0.88	0.23	0.07	0.04	0.33

[a]Includes Brooks Bank, Lisianski Island, Nihoa, Pearl and Hermes Reef, and French Frigate Shoals.

Table 5.--Annual fishing effort for active vessels in the Northwestern Hawaiian Islands lobster fishery, 1983-92. Number of vessels, trips, fishing days and trap hauls. Fishing days per vessel are adjusted (see Table 8). Data are from vessel logbooks.

Year	Vessels	Trips	Fishing days	Fishing days/ per vessel	Trap-hauls
1983	4	19	279	--	84,870
1984	11	38	822	--	363,000
1985	16	62	1,653	--	983,062
1986	16	80	2,166	--	1,352,580
1987	11	38	1,217	120	804,723
1988	9	28	1,617	139	845,200
1989	11	33	1,323	120	1,071,538
1990	14	45	1,468	109	1,182,485
1991	9	21	432	43[a]	296,648
1992	12	28	893	74[a]	721,682

[a]Fishing days/per vessel for 1991-92 are unadjusted because of the fishery closure.

Table 6.--Number of vessels, trips, and sea days, by vessel class, for the lobster fleet in the Northwestern Hawaiian Islands, 1992. Unadjusted figures include incomplete trips; adjusted figures that correct for vessels fishing less than full time and for incomplete trips are not used in 1992 because of the fishery closure in mid-year. Standard deviations are in parentheses; data are compiled from vessel logbooks.

Vessels		Trips	Sea	Mean number of sea days by activity per vessel						
Class	No.	(No.)	days	Fishing	Traveling	Running	Weather	Breakdown	Rest/deck work	Missing
I	2	4	— —	— —	— —	— —	— —	— —	— —	— —
II	7	15	113.4(48.9)	88.6(48.9)	17.1(9.8)	5.7(6.3)	0.6(1.1)	0.0(0.0)	1.4(2.0)	0.0(0.0)
III	3	9	82.0(43.4)	49.3(43.4)	22.7(8.5)	0.3(0.6)	6.7(6.1)	0.0(0.0)	3.0(3.5)	0.0(0.0)
Total Fleet	12	28	99.3(49.6)	71.9(38.3)	18.3(9.5)	3.6(5.4)	2.0(3.9)	0.5(1.7)	2.7(4.0)	0.3(0.9)

—Indicates confidential data.

Table 7.--Reported sightings of or interactions with endangered or threatened species by the lobster fleet in the Northwestern Hawaiian Islands, 1992. Data are from the vessel logbooks.

Area	No. of sightings by No. of animals	
	One animal	Two animals
Monk seals observed in statistical area		
Gardner Pinnacles	2	0
Nihoa	1	8
Necker Island	21	1
Maro Reef	1	0
Pearl & Hermes Reef	4	0
Monk seals observed in vicinity of fishing gear		
French Frigate Shoals	1	0
Gardner Pinnacles	3	0
Necker Island	6	0
St. Rogatien	1	0
Turtles observed in statistical area		
Necker	2	0
Pearl & Hermes Reef	1	0

Table 8.--Fishing vessels with limited entry permits for the 1992 Northwestern Hawaiian Islands lobster fishery.

Aleutian Spray	*Dominis**	*Marie M*
Archer	*Haida*	*Miss Jessico*
Betty N	*Liberty*	*Ocean Challenger*
Bounty	*Lusty*	*Petite One*
*Cornucopia**	*Magic Dragon**	*Sea Spray**

The Regional Director also approved the transfer of three permits (*Haida, Laysan, Shaman*) without the sale of a vessel which is allowed under the limited entry program.

In 1992, permits for lobster fishing in federal waters of the main Hawaiian Islands (Permit Area 2) were issued to two vessels: *Kuma* and *Lea Lea*.

*These vessels did not participate in the Northwestern Hawaiian Islands lobster fishery during 1992.

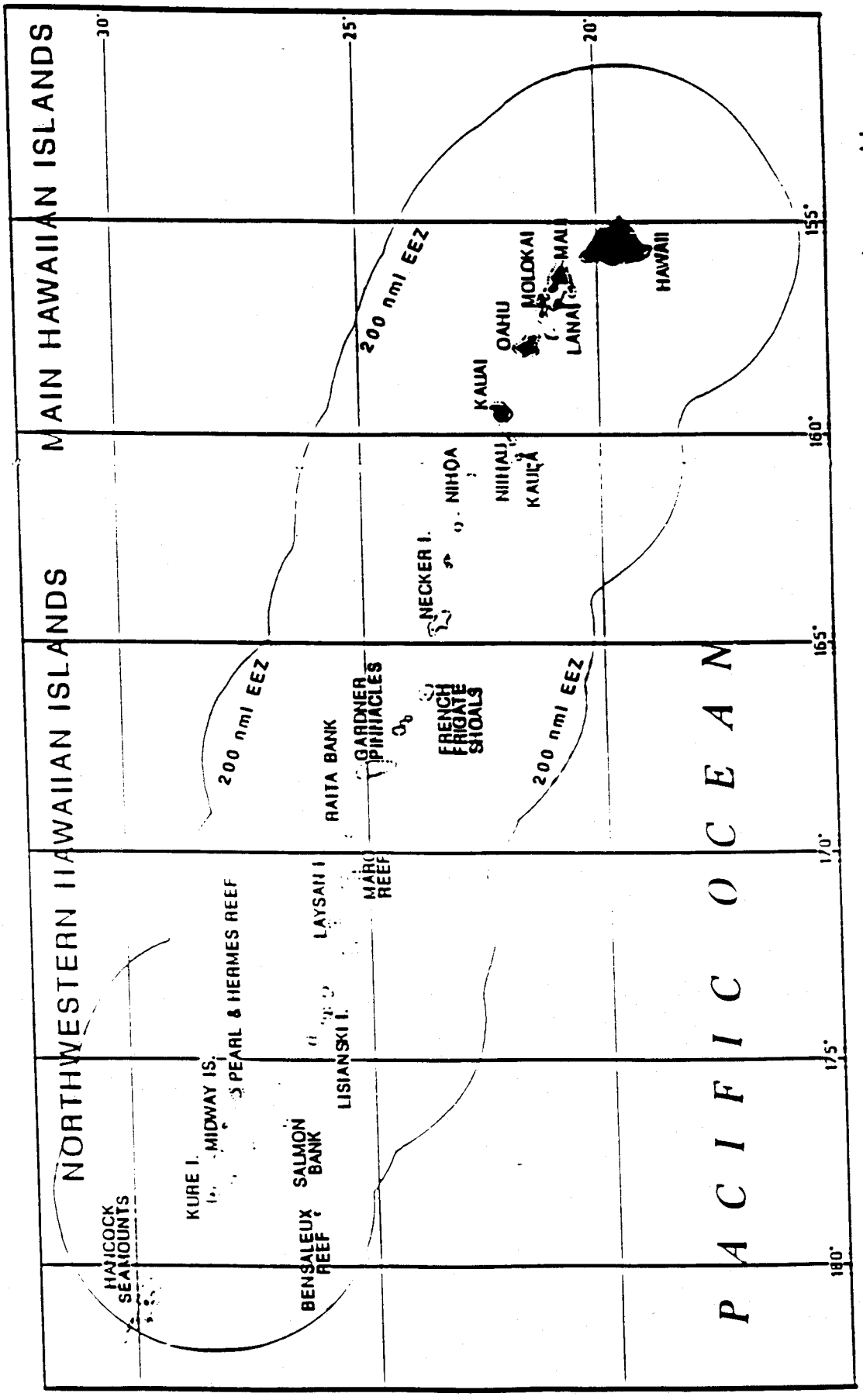


Figure 1.--Map of the Northwestern Hawaiian Islands (permit area 1), the main Hawaiian Islands (permit area 2) and the 200 nmi Exclusive Economic Zone (EEZ).

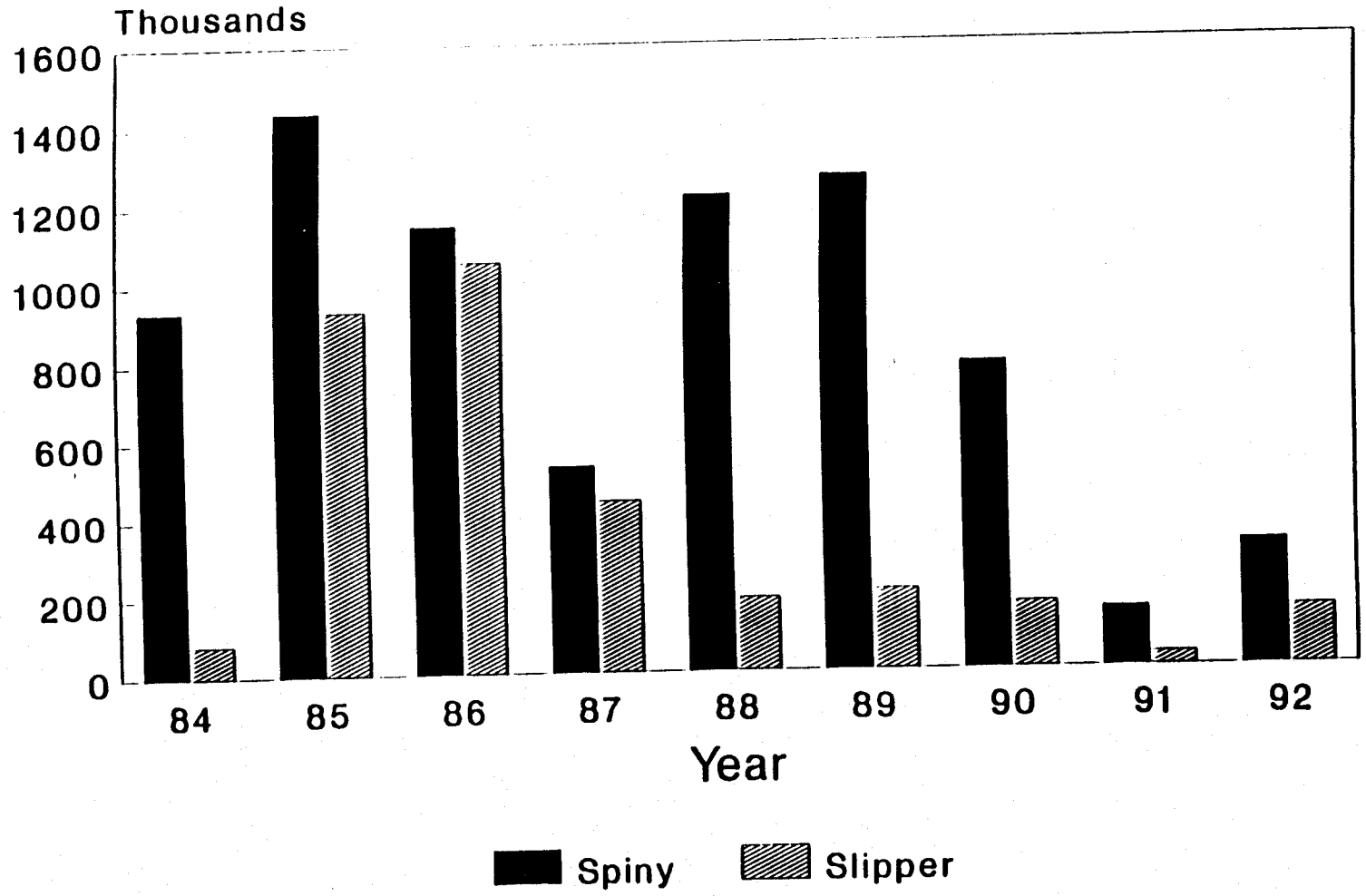


Figure 2.--Estimated annual landings (1,000 lbs wet weight) of spiny and slipper lobsters in the Northwestern Hawaiian Islands, 1984-92.

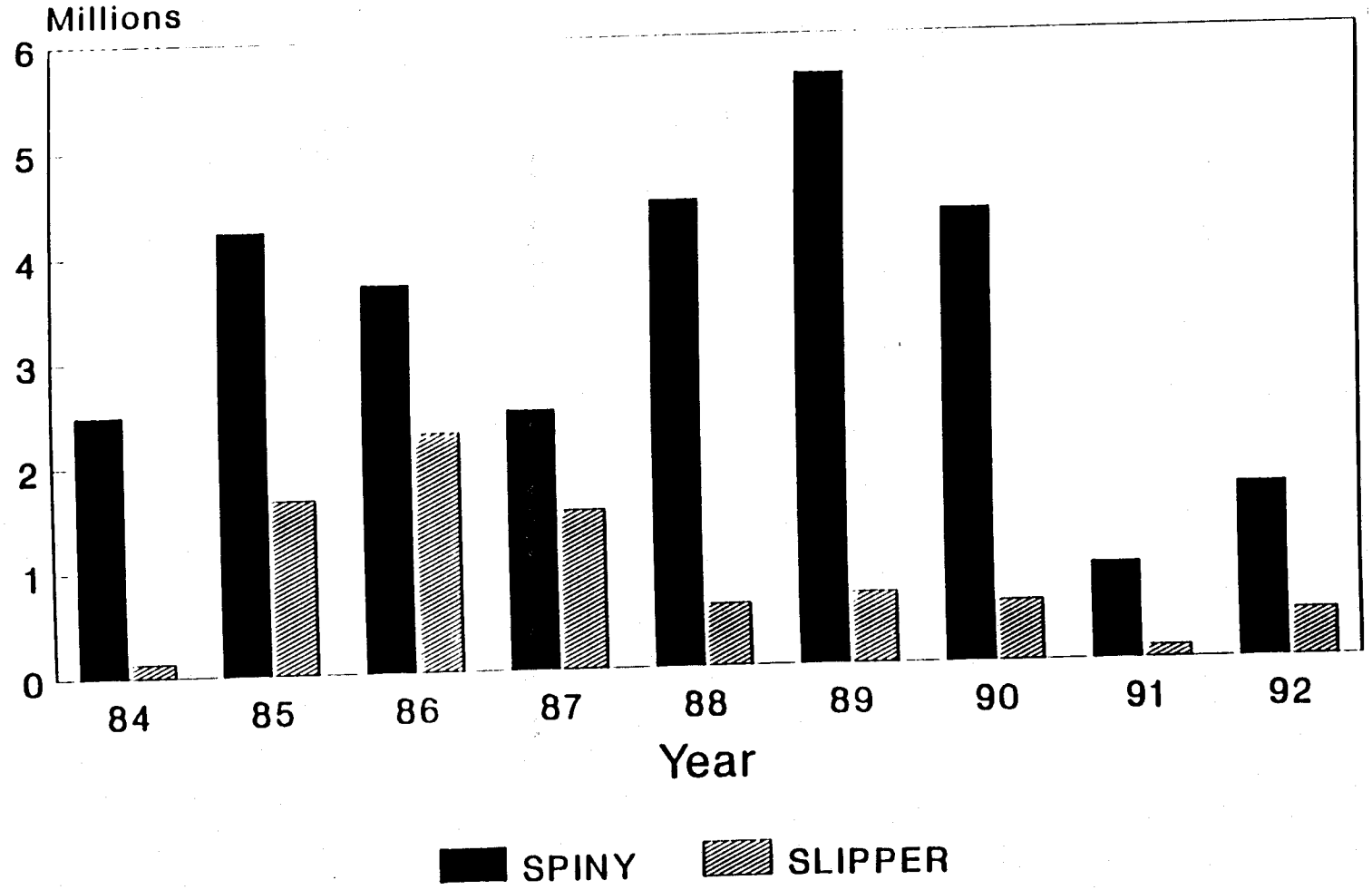


Figure 3.--Ex-vessel revenue for spiny and slipper lobsters from the Northwestern Hawaiian Islands, 1984-92.

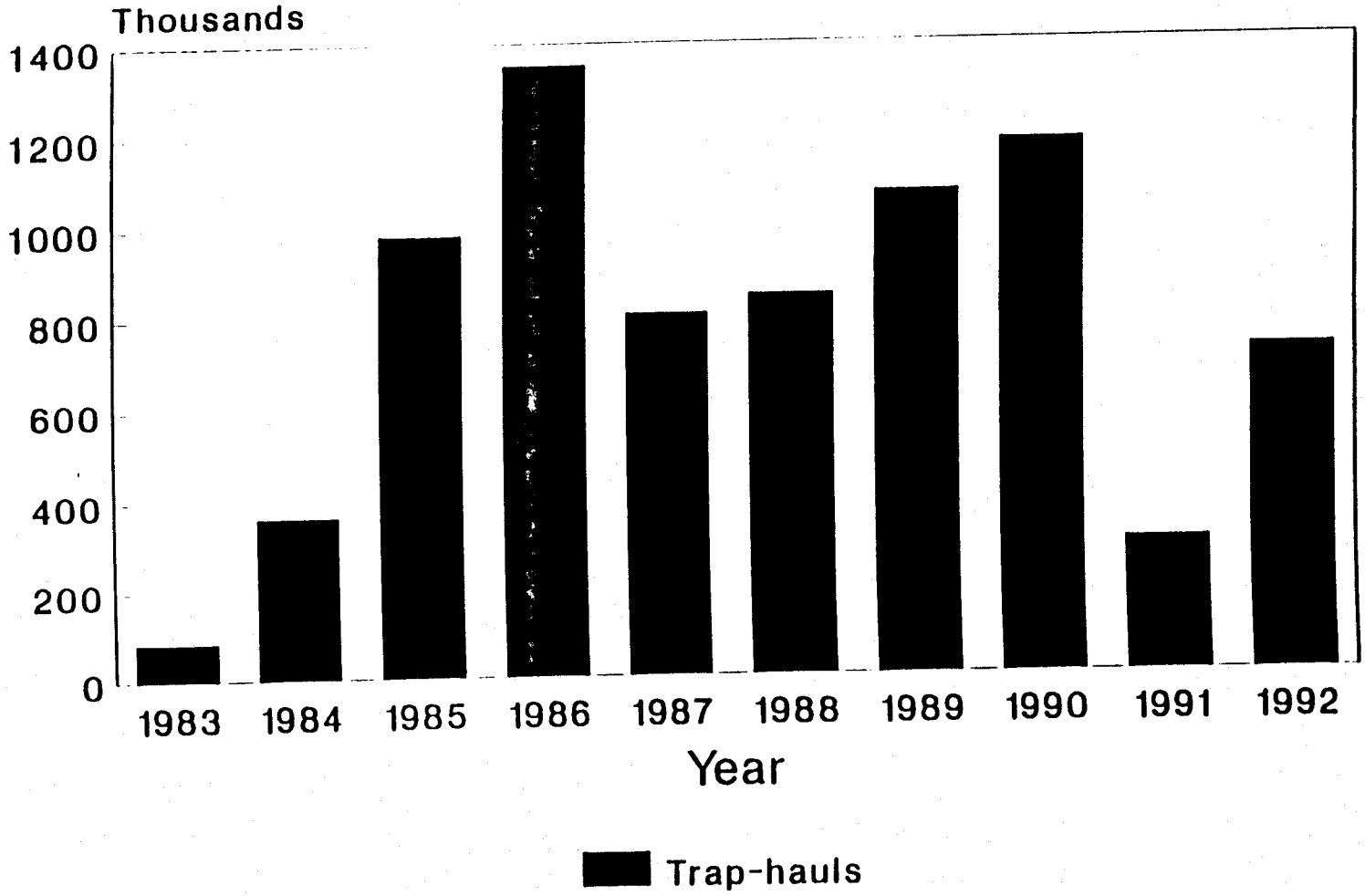


Figure 4.--Fishing effort (trap-hauls) by the Northwestern Hawaiian Islands lobster fleet, 1983-92.

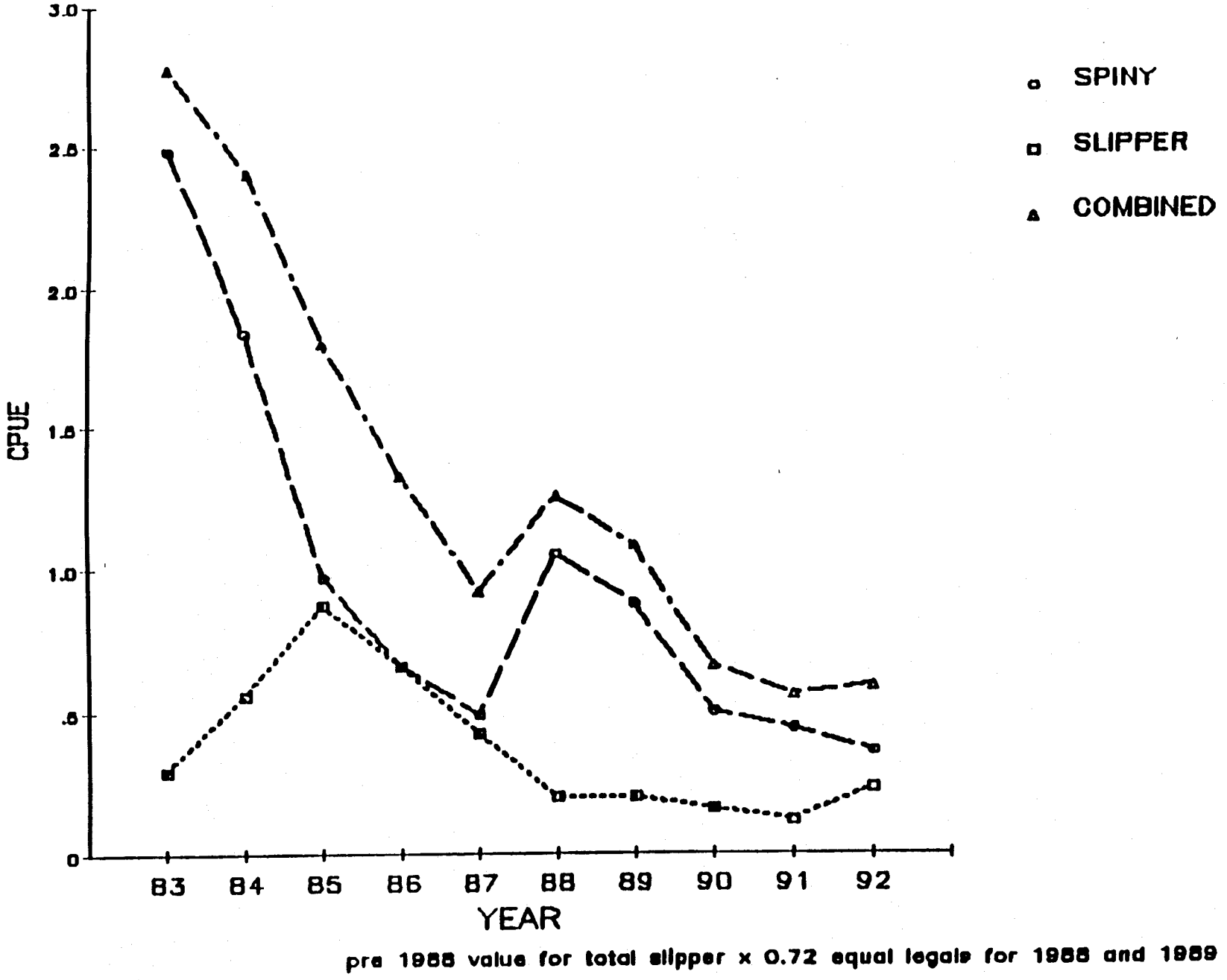
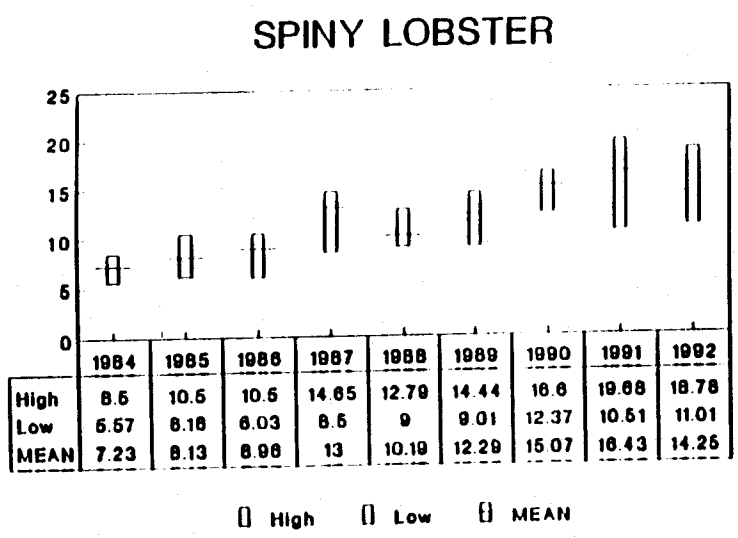


Figure 5.--Catch-per-unit effort (CPUE) for spiny and slipper lobsters from the Northwestern Hawaiian Islands, 1983-92. (CPUE for slipper lobster is calculated as 0.72 multiplied by the number retained before 1988.)



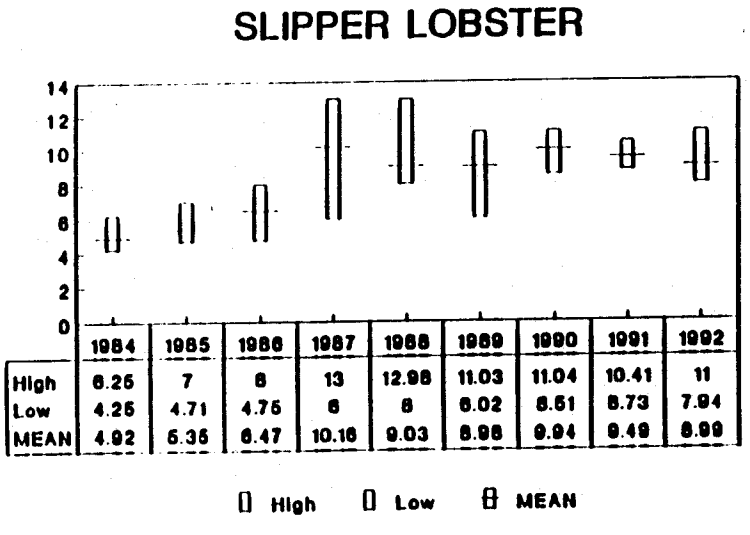


Figure 6.--Low, mean, and high ex-vessel prices of frozen spiny and slipper lobster tails from the Northwestern Hawaiian Islands, 1984-92.

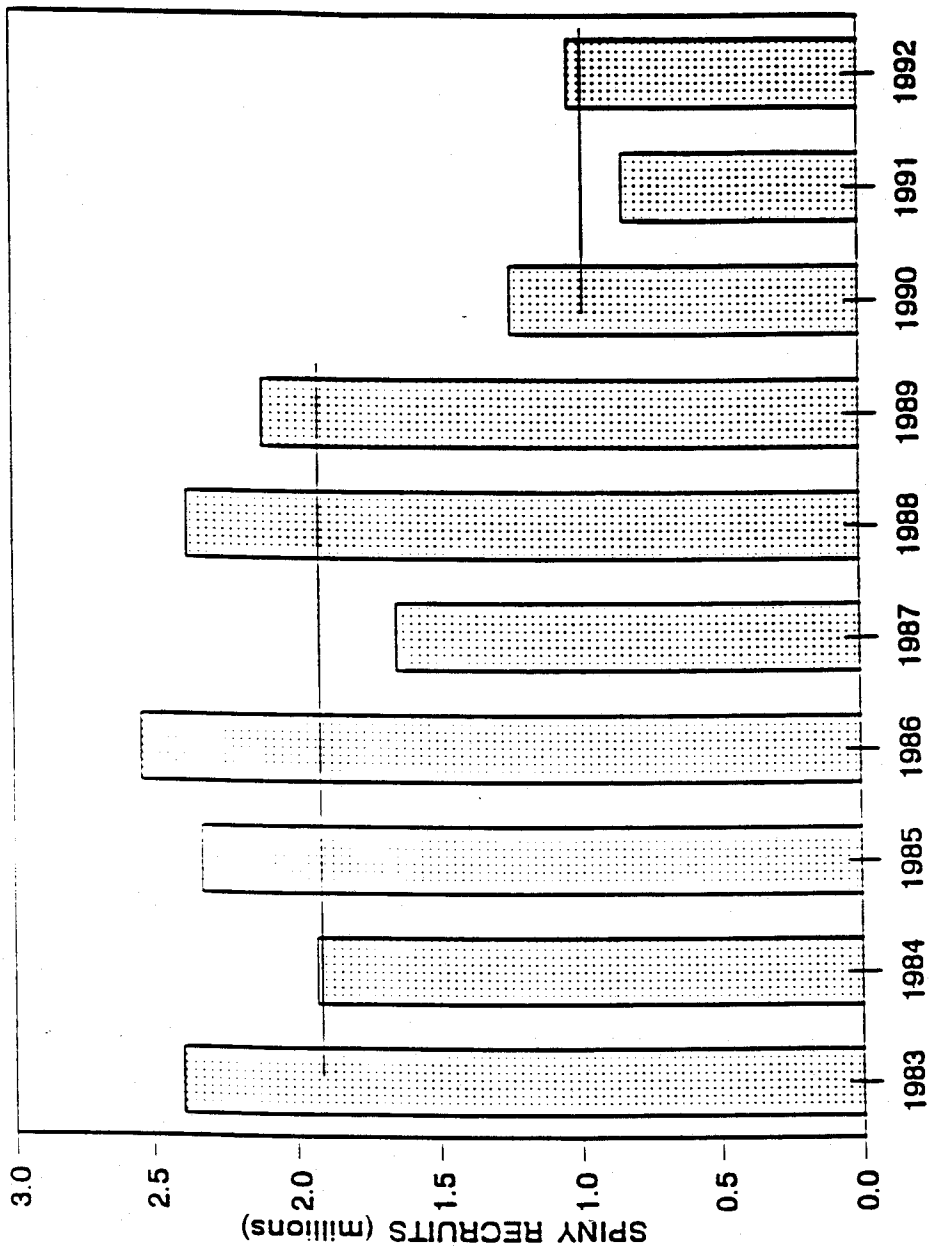


Figure 7.--Estimated annual recruitment of spiny lobsters to the Northwestern Hawaiian Islands lobster fishery 1983-92. Horizontal lines indicate the average annual recruitment for the years 1983-89 and 1990-92.

LOBSTER SALES REPORT

VESSEL _____ PERMIT NO. _____ DATE OF OFFLOADING_____

PORT OF LANDING_____ PACKING SLIP RECEIVED (IF RECEIVED, ATTACH) ___YES ___NO

FIRST-LINE BUYER(S): *

NAME	ADDRESS	PHONE
_____	_____	_____
_____	_____	_____

		FROZEN TAILS		LIVE WHOLE		FROZEN WHOLE	
		NUMBER**	WEIGHT** (LB)	NUMBER**	WEIGHT** (LB)	NUMBER**	WEIGHT** (LB)
SPINY LOBSTER	SOLD						
	NOT SOLD						
SLIPPER LOBSTER	SOLD						
	NOT SOLD						
OCTOPUS	SOLD						
	NOT SOLD						
OTHER (IDENTIFY)	SOLD						
	NOT SOLD						

* Vessel operators are considered first-level buyers if they sell direct to retailers or the public and must provide sales revenue and lobster size information.

** Either weight or numbers must be reported.

CAPTAIN_____ DATE_____

FIRST-LEVEL BUYER LOBSTER WORKSHEET

VESSEL _____ PERMIT NO. _____ DATE OF OFFLOADING_____ PORT OF LANDING_____

BUYER _____

	FROZEN TAILS				SIZE (LB)	LIVE			FROZEN WHOLE		
	SIZE (OZ.)	NO.	WT (lb)	REVENUE		NO.	WT (lb)	REVENUE	NO.	WT (lb)	REVENUE
SPINY LOBSTER	4-6				<1						
	6-8				1-1.5						
	8-10				1.5-1.75						
	10-12				1.75-2						
	>12				>2						
	TOTAL				TOTAL						
SLIPPER LOBSTER	<4										
	4-6				<1						
	6-8				1-1.5						
	8-10				1.5-1.75						
	10-12				1.75-2						
	>12				>2						
	TOTAL				TOTAL						
OCTOPUS	TOTAL										
OTHER	TOTAL										

APPENDIX 4. Text of Preamble and Proposed Regulations

Billing Code: 3510-22

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 681

[Docket No. ; I.D.]

Crustacean Fisheries of the Western Pacific Region

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce

ACTION: Proposed Rule.

SUMMARY: The Secretary of Commerce (Secretary) issues a proposed rule to implement Amendment 8 to the Fishery Management Plan for the Crustacean Fisheries of the Western Pacific Region (FMP). The rule would establish framework procedures for considering quota adjustments for the fishery and would eliminate a landing requirement for permit renewal. Notification and reporting procedures also would be modified. These changes are intended to improve the administration of the management program and ensure the achievement of optimum yield from the fishery.

DATES: Written comments must be received by [insert date 30 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: Copies of Amendment 8 and the associated environmental assessment may be obtained from Ms. Kitty M. Simonds, Executive Director, Western Pacific Fishery Management Council, 1164 Bishop St., Suite 1405, Honolulu, HI 96813.

Comments on the proposed rule should be sent to Mr. Rodney R. McInnis, Acting Director, Southwest Region, NMFS, 501 West Ocean Boulevard, Suite 4200, Long Beach, CA 90802.

Comments on the information collection should be sent to the Acting Regional Director and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503 (Attention: NOAA Desk Officer).

FOR FURTHER INFORMATION CONTACT: Kitty M. Simonds, Western Pacific Fishery Management Council, at (808) 522-8220; Svein Fougner, NMFS, at (310) 980-4034; or Alvin Z. Katekaru, NMFS, at (808) 973-2937.

SUPPLEMENTARY INFORMATION: In 1983, the Western Pacific Fishery Management Council (Council) developed an FMP for lobster

fisheries in the Western Pacific region. The principal fishery for spiny and slipper lobster occurs in the Northwestern Hawaiian Islands (NWHI). In 1992, an annual quota, a season, and a limited entry program were implemented for the NWHI fishery. In January 1993, the Crustaceans Plan Team and Advisory Panel, with enforcement agency representatives, met to discuss the effectiveness of the regulations implementing these new management measures during their first year of operation. In addition, the review group discussed the preliminary 1993 quota determination and stock abundance expectations for the future.

As a result of that review, the Council decided that changes to the FMP were needed to address immediate operational concerns arising in the first year of the quota/limited entry program. A procedure was also needed to modify the target catch-per-unit-effort (CPUE) used in the quota formula in the future, should new information indicate the need for a change. The recommended changes are proposed in Amendment 8.

Fifteen vessels qualified for permits under the limited entry program. The program presently requires that permit holders make a qualifying landing during one of the two years preceding the year for which the renewed permit is valid. Eleven vessels participated in the limited entry fishery in 1992. In 1993, due to low stock abundance, the fishery was closed and no permit holder had the opportunity to make a landing. Therefore, the first year for application of the 2-yr requirement was extended until 1995. A relatively low initial quota of 200,000 lobsters has been established for the 1994 season. Under the present regulations, four permit holders must fish in 1994 to retain their permits. The "use-it-or-lose-it" requirement would force fishermen to fish to retain permit eligibility, even when their participation may not be desirable from either a conservation or economic standpoint. This is particularly true when the quota is low, a situation which may continue to exist for several years due to environmental conditions. For these reasons, Amendment 8 proposes to eliminate the 2-yr landing requirement for permit renewal.

Determination of the annual quota depends on research information and actual CPUE data from the fishery. The target CPUE presently used in determining the quota is 1.0 animals per trap-haul, an effort level considered to be consistent with the estimated maximum sustainable yield (MSY) for spiny lobsters of about one million animals per year. As more information becomes available concerning the productivity of the stocks, the relationship of the stocks to the overall marine environment, and the response of the stocks to environmental changes, it may be appropriate to change the target CPUE figure so that the formula will be more reflective of stock status. Therefore, Amendment 8 establishes a framework procedure for considering the best available information and, if appropriate, for changing the target CPUE figure in the quota formula.

The annual quota determination process provides for the announcement of an "initial quota" , then establishment of a final quota based on actual fishery performance during the first month of fishing in July. The Council intended the initial quota to be a forecast of what the annual quota was likely to be for the year. However, during the first full year of quota management, the initial quota was zero and the Southwest Regional Director (RD), NMFS, allowed no fishing. The Council recognizes that a quota forecast of zero is indicative of low recruitment to the stocks. Nevertheless, variability in recruitment and the limited data that may be available in any year to estimate the quota could result in wide disparity between the estimated recruitment and actual recruitment. If a fishery was permitted early in the season, the harvest rate could substantially change the estimate of abundance and the resultant quota. Therefore, Amendment 8 proposes a framework process that would allow the RD, with the concurrence of the Council, to either close the fishery or allow some level of fishing with the intention of collecting fisheries data or alleviating special hardships when the forecasted quota is zero. During this process, special attention will be paid to confidence intervals associated with the estimate and factors that may affect the accuracy of the estimate. A decision to allow some level of fishing must demonstrate that there will be no substantial increase in the risk of overfishing.

Amendment 8 also would modify the reporting requirements in order to increase the ease of monitoring landings and the effectiveness of enforcement. The proposed amendment would narrow the notification period to a period of "at least 24 hours but not more than 36 hours before returning to port". Vessel operators would also be required to notify the Southwest Region, NMFS Enforcement, of the location and time of offloading of their catch. These additional notification requirements will allow enforcement agencies to efficiently schedule agents' dock-side presence for effective shoreside monitoring and enforcement of regulations concerning size limits, prohibition of retention of berried lobsters, and reporting requirements. Efforts are also underway to review all notification procedures for all Council FMP fisheries and develop a streamlined, comprehensive notification procedure for all federally-managed fisheries in the region. Amendment 8 would allow the resulting changes to the lobster regulations to be implemented by the RD through rulemaking procedures. This would result in improved data collection and enforcement.

The FMP now requires that vessel operators provide sales revenue and lobster tail size information through submission of a Transshipment and Sales Report. The timeliness and completeness of this report has been a problem because vessel operators must rely on information from the first-level buyer to complete the report, and this information is often not available until after the required 72 hour post-landing submission deadline. Amendment 8 proposes to modify the Sales Report to include information

about the first-level buyer which would allow authorized agents to obtain the information from the buyer, if the vessel operator is provided the information in time to meet a revised 72 hour from off-loading submission deadline. The reporting burden on the fishermen is also reduced by allowing the vessel operator to attach sales information provided by the buyer, rather than filling out a separate form. The proposed modifications, including requiring information on the number or weight of lobster not sold, will also increase the usefulness of the Sales Report as a cross-check to verify daily logbook information.

In summary, the actions proposed in Amendment 8 are intended to improve the administration of the quota system and the fishery so that the fishery can achieve the optimum yield from the stocks while preventing overfishing.

CLASSIFICATION:

This proposed rule is exempt from prepublication review for purposes of E.O. 12866.

The General Counsel of the Department of Commerce certified to the Small Business Administration that this rule, if adopted, will not have a significant economic impact on a substantial number of small entities because no reduction in gross revenues is expected, the affected businesses will not be forced to engage in unprofitable fishing, and no investments are required to comply. As a result, a regulatory flexibility analysis was not prepared.

This rule contains a collection of information requirement subject to the Paperwork Reduction Act. A notification requirement prior to offloading of the catch would be added. The sales report also would be modified by eliminating certain data elements. For purposes of estimating the maximum reporting burden, it is assumed that all 15 permit holders will take 4 trips per year. The maximum total burden of these reports would be an additional 9 hours per year. These changes would be modifications of a collection of information previously approved by the Office of Management and Budget (OMB Number 0648-0214).

List of Subjects in 50 CFR Part 681

Fisheries, Reporting and recordkeeping requirements.

Dated:

_____

Name
Title

For the reasons set out in the preamble, 50 CFR Part 681 is proposed to be amended as follows:

PART 681 - CRUSTACEAN FISHERIES OF THE WESTERN PACIFIC REGION

1. The authority citation for part 681 continues to read as follows:

Authority: 16 USC 1801 et seq.

2. In §681.2, the definition of Initial quota is deleted, the definition of Landing is revised, and definitions of Council, First-level buyer, Forecast quota, and Off-loading are added in alphabetical order to read as follows:

§ 681.2 Definitions.

* * * * *

Council means the Western Pacific Fishery Management Council established by the Magnuson Fishery Conservation and Management Act, 16 U.S.C. 1821 et seq.

* * * * *

First-level buyer means: 1) the first person who obtains, with the intention to resell, management unit species, or portions thereof, that were harvested or received by a vessel that holds a permit under this part or that is otherwise regulated under this part; 2) a person who provides recordkeeping, purchase, or sales assistance in obtaining or selling such management unit species (such as the services provided by a wholesale auction facility), or 3) a fishermen who sells direct to the public management unit species harvested by a vessel that holds a permit under this part or that is otherwise regulated under this part .

Forecast quota means the initially determined estimate of the allowable number of spiny and slipper lobster (combined) that may be caught and retained from permit Area 1 by all permitted vessels in the upcoming season, and is calculated, using the quota formula in the FMP, from previous years/ catch and effort information, and possibly using research cruise data and other sources, and published in the Federal Register in February each year.

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Landing means bringing fish to shore for the purpose of offloading.

Off-loading means removing fish from the fishing vessel.

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2. In § 681.5 paragraph (a) is revised, paragraph (b) heading is revised, paragraphs (c) and (d) are revised, and a new paragraph (e) is added to read as follows:

§ 681.5 Recordkeeping and reporting.

(a) Daily Lobster Catch Report. The operator of any vessel engaged in commercial fishing for lobster subject to this part must maintain on board the fishing vessel, while fishing for lobster, an accurate and complete NMFS Daily Lobster Catch Report on a form provided by the Regional Director. All information specified on the form must be recorded within 24 hours after the completion of the fishing day. The Daily Lobster Catch Reports for a fishing trip must be submitted to the Regional Director within 72 hours of each landing.

(b) Information Requirements for Daily Lobster Catch Report.

* * * * *

(c) Lobster Sales Report. (1) The operator of any vessel engaged in commercial fishing for lobster subject to this part must submit to the Regional Director within 72 hours of off-loading of lobster an accurate and complete Lobster Sales Report on a form provided by the Regional Director, and attach packing or weighout slips provided to the fisherman by the first-level buyer, unless the packing/weighout slips have not been provided in time by the buyer.

(2) If packing/weighout slips are not available in time for submission with the Sales Report, an authorized agent may require the first-level buyer to make available for inspection and copying specified information concerning the sale. First-level buyers(s) must either provide the required packing/weighout slips or report the required information on a worksheet provided by the Regional Director.

(d) Information Requirements for Lobster Sales Report.

(1) Vessel information

(i) Name of vessel
(ii) Permit number

(2) First-level buyer information

(i) Name of first-level buyer
(ii) Address and phone number

(3) Landing information

(i) Date of off-loading
(ii) Port of landing

(4) Sales information

(i) Total number or weight of spiny lobsters sold and not sold by product type;
(ii) Total number or weight of slipper lobsters sold and not sold by product type;
(iii) Total number or weight of octopus sold and not sold by product type;
(iv) Total number or weight of other fishery products sold and not sold by product type;
(v) If available, packing slip information providing revenue information by species, product type, and size categories

(e) Modification of Reporting Requirements. The RD may, after consultation with the Council, modify the information to be provided on the Daily Lobster Catch Report or the Lobster Sales Report, through written notice to the fishermen or through modifications to paragraphs (b) or (d). Modifications first made through written notice will be subsequently reflected in changes to paragraphs (b) or (d).

3. In § 681.7, paragraph (b) is modified by revising paragraph (5) and by adding paragraph (14) to read as follows:

§ 685.7 Prohibitions.

* * * * *

(b) * * *

(5) Fail to report before landing or off-loading as specified in § 681.25.

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(14) Refuse to make available to an authorized agent for inspection and copying any records that must be provided in accordance with § 681.11.

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4. A new § 681.11 is added to read as follows:

§ 685.11 Availability of Records for Inspection.

(a) Any first-level buyer shall provide an authorized officer access for inspecting and copying all records of fish purchases, sales, or other transactions involving fish taken or handled by vessels that have permits issued under this part or are otherwise subject to this part, including but not limited to information concerning:

(1) The name of the vessel involved in each transaction and the owner or operator of the vessel;
(2) The amount, number, and size of each species of fish involved in each transaction; and
(3) Prices paid by the buyer and proceeds to the seller in each transaction.

5. § 681.25 is revised to read as follows:

§ 681.25 Notification requirements.
(a) The operator of a fishing vessel that has taken lobsters in the EEZ off the Northwestern Hawaiian Islands shall contact an appropriate agency designated by the RD, as described in a written notice to the fishermen.

(1) To report, at least 24 hours but not more than 36 hours before landing, the port, the approximate date, and the time at which lobsters will be landed; and

(2) To report, not less than 6 hours and not more than 12 hours before offloading, the location and time that offloading of the lobster will begin.

(b) The RD may, after consultation with the Council and the Coast Guard representative on the Council, modify these notification requirements through written notice to the fishermen. Modifications first made through written notice will be subsequently reflected in changes to paragraph (a).

6. In § 681.30, paragraph (c) is revised to read as follows:

§ 681.30 Limited access management program.

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(c) Renewal. Applications for renewal of a limited entry permit must be submitted to the Pacific Area Office by December 31 or the preceding year.

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7. In § 681.31, the term initial quota is replaced with the term forecast quota,paragraph (b) is revised, paragraph (d) is redesignated paragraph (e), and a new paragraph (d) is added, to read as follows:

§ 681.31 Quota Management Program.

* * * * *

(b) Forecast quota. (1) The Regional Director shall use information in commercial fishing logbooks from previous years, and may use information from research sampling and other sources, to establish the forecast quota, applying the quota formula of the fishery management plan.

(2) The Assistant Administrator shall publish a notice indicating the forecast quota in the Federal Register by February 15 each year, and shall use other means to notify permit holders of the forecast quota for the year.

(3) If the forecast quota determined by the Regional Director and noticed in the Federal Register is zero, the Regional Director shall refer the question to the Council for discussion at its next meeting.

(4) The Council's notice of the agenda for its next meeting will specifically indicate that the Council will discuss the forecast quota with the RD, and may make recommendations that would allow some level of fishing during July.

(5) At its meeting, the Council shall review the statistical information supporting the determination of the forecast quota. Special attention will be paid to confidence intervals associated with the estimate, and factors which may affect the accuracy of the estimate. For example, the quota formula depends heavily on fishery data from the preceding year. If anomalous conditions existed (i.e., low participation by the fleet, incomplete coverage of the archipelago, adverse weather conditions or other environmental conditions affecting catchability), then commercial CPUE may not be representative of lobster abundance and a forecast quota of zero may be overly conservative. The Council shall ask its Crustaceans Plan Team, Scientific Committee, and Advisory Panel for advice; and shall decide whether to recommend allowing some level of fishing to collect fishery data on which to base the final quota.

(6) If the Council agrees to recommend a different forecast quota, or allow some level of fishing to collect fishery data, the Council shall submit this request to the Regional Director with documentation supporting its recommendation. The Council may decide to open the fishery for a limited period of time and may impose additional measures to restrict effort or catch during that time period. The request must demonstrate how the Council's

recommendation will not result in or substantially increase the risk of overfishing of the stocks.

(7) If the Regional Director concurs, he shall file a notice in the Federal Register indicating the change in the forecast quota or other restricted fishing conditions and summarizing the information supporting this change.

(8) If the Regional Director does not concur, he shall provide a written explanation of the reasons for rejecting the Council's recommendation.

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(d) Quota formula review. (1) The Crustaceans Plan Team shall annually report to the Council whether the target CPUE in the quota formula is consistent with the estimation of the MSY for the stocks given the results of any new research concerning the productivity of the stocks.

(2) The Plan Team shall indicate whether a change in the target CPUE will result in quota determinations that would more precisely reflect the status and long-term productivity of the stocks.

(3) If the Plan Team indicates a change in the target CPUE is appropriate, the Plan Team shall indicate the proposed target CPUE, the data that support a change in the target CPUE, and the impacts and implications of the change, including the risk of overfishing.

(4) The Council shall consider any such recommendation at its next meeting. The notice to the public of the meeting shall specifically state that the Council may take action to recommend a change in the target CPUE and shall indicate that a portion of the meeting will be open to public comment on the issue.

(5) At its meeting, the Council shall review the statistical information supporting the change in the target CPUE; shall ask its Scientific and Statistical Committee and Advisory Panel for advice; and shall decide whether to recommend a change in the target CPUE through rulemaking.

(6) If the Council agrees to recommend a different target CPUE, the Council shall submit this request to the Southwest Regional Director with documentation supporting its recommendation. The request must demonstrate how the Council's recommendation will not result in or substantially increase the risk of overfishing of the stocks.

(7) If the Regional Director concurs, s/he shall file a notice in the Federal Register indicating the proposed change in

the target CPUE for the quota formula and summarizing the information supporting this change.

(8) Following a 30-day comment period, the Regional Director shall consider the information submitted by the Council and comments submitted during the comment period. S/he shall then determine whether the change in the target CPUE is consistent with the objectives of the FMP and will prevent overfishing. If so, s/he shall file a notice in the Federal Register indicating that the new target CPUE will be applied in the quota determination.

(9) If the Regional Director concludes that the proposed change in the target CPUE should not be approved, s/he shall indicate in writing to the Council the reasons for the disapproval.